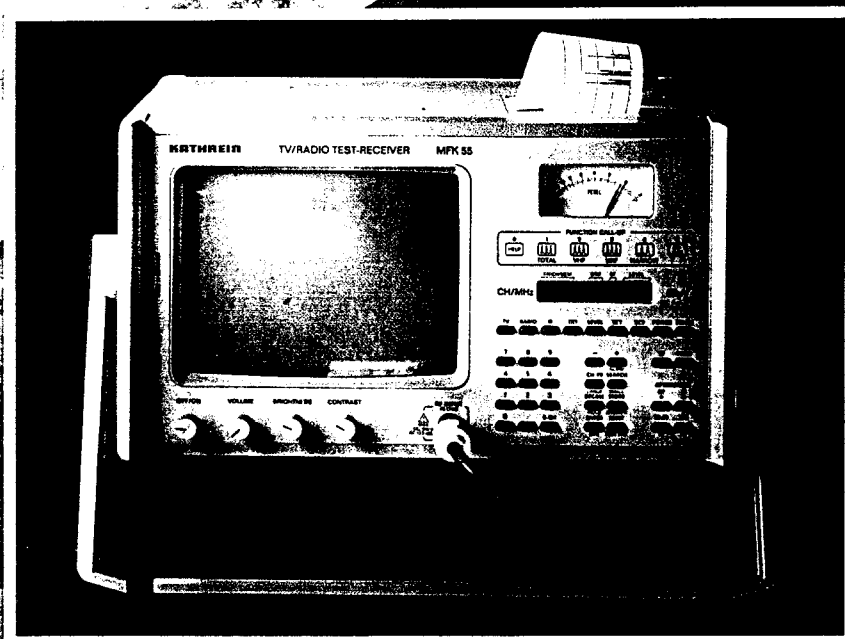


TV/Radio-Signal Meter MFK 55

MC-Service



KATHREIN

Antennen · Electronic

RECOMMENDATION FOR SERVICE REPAIRS

- Use only original spare parts.
- Apply only original fuse value.
- Safety compliance, parts of the product must not be visually damaged or unsuitable. This is valid especially for insulators and insulating parts.
- Mains leads and connecting leads should be checked for external damage before connection. Check the insulation!
- The functional safety of the tension relief and bending protection bushes are to be checked.
- Thermally loaded solder pads are to be suck off and re-soldered.
- Ensure that the ventilation slots are not obstructed.
- No repairs or modifications should be attempted on the RF divider, tuner and measurement amplifier, since they could have an adverse effect on the subsequent measurement accuracy.
- After repairing measurement accuracy as well as every single function of the level strength meter must be checked and the unit must be re-calibrated if necessary.
- Re-calibration can only be executed with the computer calibration program of MFK55/85 via the interface RS232 from Kathrein.

It is available at: Fa. ESC

Postfach 1160
83220 Grassau
Germany

HANDLING OF MOS CHIP COMPONENTS

MOS circuits require special attention with regard to static charges.

Static charges may occur with any highly insulating plastics and can be transferred to persons wearing clothes and shoes made of synthetic materials. Protective circuits on the inputs and outputs of MOS circuits give protection to a limited extent only due to the time of reaction. Please observe the following instructions to protect the components against damages from static charges:

1. Keep MOS components in conductive packages until they are used. MOS components must never be stored or transported in Styropor materials or plastic magazines.
- 2. Persons have to rid themselves of electrostatic charges by touching a grounded object before handling MOS components.
- 3. Take the chip by the body without touching the terminals.
4. Use only grounded instruments for testing and processing purposes.
5. Remove or connect MOS IC's with in mounting sockets only if the operating voltage is disconnected.
6. The circuits of p-channel MOS components must not be connected to positive voltages (with reference to bulk VVS).

MOS SOLDERING INSTRUCTIONS

- Use only mains isolated low-voltage soldering irons.
- Maximum soldering period 5 seconds at a soldering iron temperature of 300 to 400 degrees Celsius.

SAFETY STANDARD COMPLIANCE

After service work the insulating resistance and the leakage current with the product switch on must be checked according to VDE 0701 or to the specification valid at the installation location! This product conforms to the Safety Class I.

Measurement of the insulation Resistance to VDE 0701

Connect an Insulation Meter (U_{Test}=500V-) to both mains poles simultaneously and between all cabinet or functional parts (antenna, sockets, buttons, decorative parts, etc.) made from metal or metal alloy. The product is fault free if:

Risol > 2 Mohm at U_{Test}=500 V-
Measuring time: > 1 s

Measurement of the Leakage Current to VDE 0701

Connect the Leakage Current Meter (U_{Test}=220V~) to both mains poles simultaneously and between all cabinet parts made from metal or metal alloy. The product is fault free if:

I-LEAK < 1 mA at U-TEST = 220 V~
Measuring time: > 1 s

Measurement of the safety earth resistance

Measure the resistance between main plug safety earth and all cabinet parts made from metal. The product is fault free if:

Resistance < 0,1 Ohm

If the safety of the product is not proved, because

- a repair and restoration is impossible
- or the request of the user is that the restoration is not be carried out the operator of the product must be warned of the danger by a written warning.

SERVICE INSTRUCTION

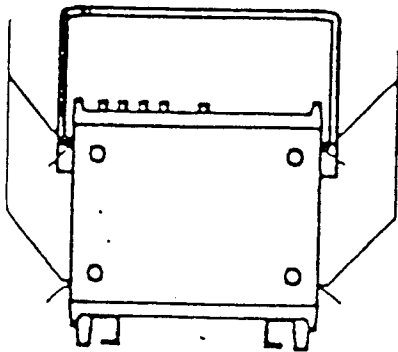
Removing the cabinet part

Cabinet upper part

- Remove 4 screws on the left and right hand side
- Lift off the cabinet upper part

Cabinet lower part

- Remove 4 screws on the left and right hand side
- Lift off the cabinet lower part

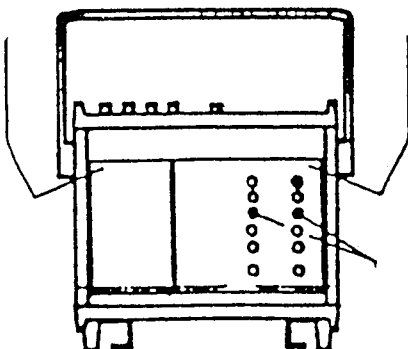


Rear panel

- Remove the black feet on the rear panel
- Hinge out the rear panel by pulling on the plastic loops
- Release plug and socket connection and remove rear panel

Service position

- Remove 2 screws at the left and right top side of the metal chassis frame and take out the main chassis board



Before takeing out a module
remove assembly screws.

TABLE OF CONTENTS

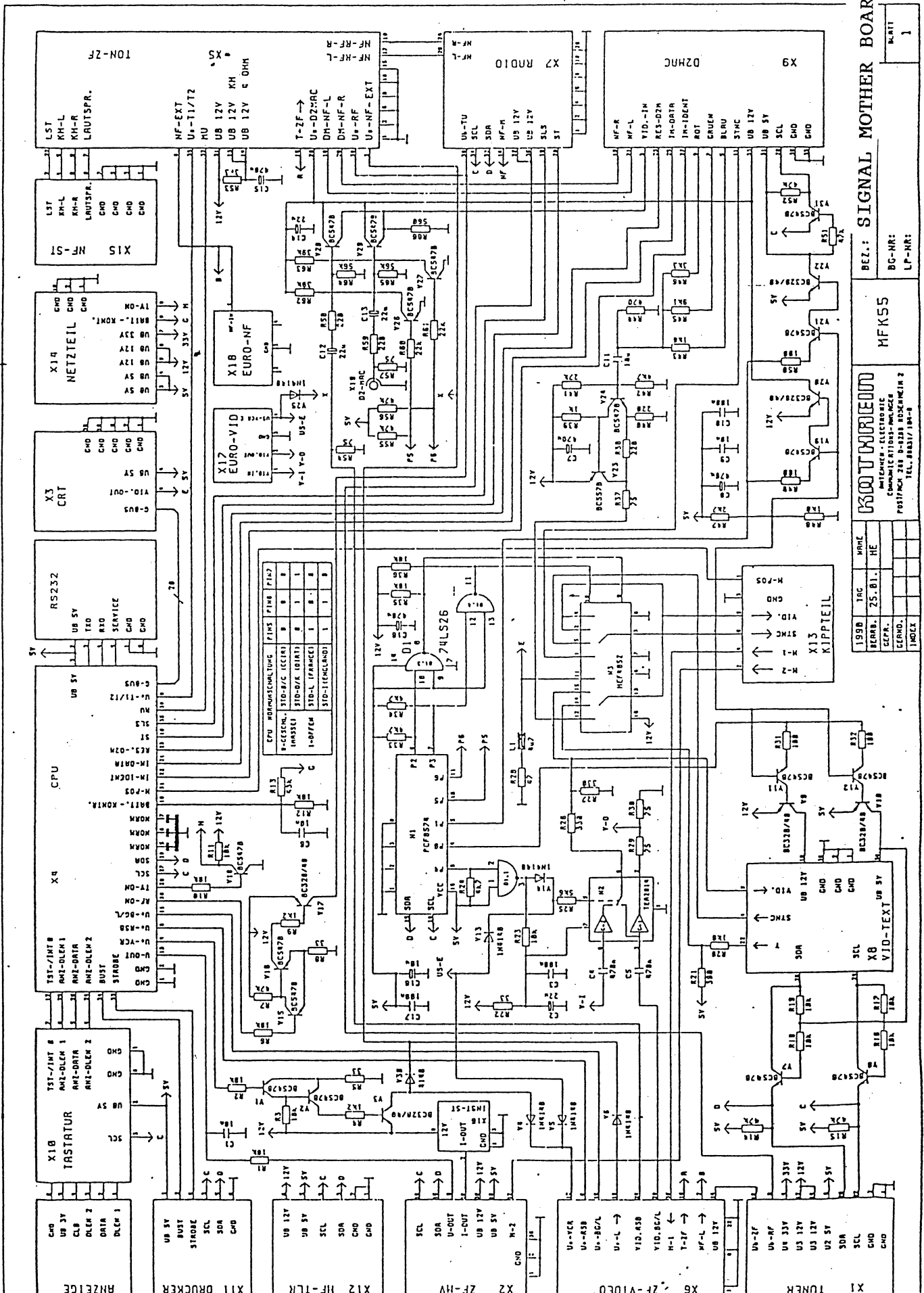
- RECOMMENDATION FOR SERVICE REPAIRS
- HANDLING OF MOS CHIP COMPONENTS
- SAFETY STANDARD COMPLIANCE
- SERVICE INSTRUCTION
- TECHNICAL SPECIFICATIONS
- TECHNICAL DATA;OPTIONS
- SIGNAL MOTHER BOARD
- POWER SUPPLY
- LINE-FIELD TIMEBASE
- TUNER
- IF-VIDEO MODULE
- SOUND IF MODULE
- MULTISOUND IF MODULE
- RADIO IF MODULE
- MEASUREMENT AMP.
- MICROCOMPUTER
- VIDEOTEXT
- D2-MAC
- RF-ATTENUATOR
- KEY BOARD
- PRINTER
- SCART SOCKET
- LIST OF SPARE PARTS

1. Technical specifications MFK 55

The MFK 55 is a portable, selective TV Radio Signal meter portable form. As an option graphic controller, videotext and printer can be offered. It can carry out, print out or display level measurements, picture and sound quality assessments. The instrument is controlled by means of a keyboard with 35 keys.

Dimensions:	W 365 mm, H 205 mm, D 306 mm, lid 30 mm
Battery operating mode:	Nickel-cadmium cells (10 x 1.25 V) (batteries not included in scope of delivery) built-in charging unit deep-discharge protection switch-over from battery operation mode to charging battery operation approx. 2 hours
Battery check:	LCD display (operates at power-up and while "RESET" key is pressed). "ACCU (-----)" (20, 40, 60, 80, 100 %)
Picture tube:	9" black/white CRT Screen size 160 x 120 mm Deflection angle 90°
Printer:	EPSON Model 180 24 characters/line and graphics Ribbon EPSON ERC 90, black Normal paper: woodfree W 57 mm, diameter max. 62mm
Dynamic:	FM > 40 dB AM > 50 dB
Image frequency:	FM > 68 dB AM > 50 dB
Reception principle:	TV superheterodyne receiver. VHF/UHF tuner with special channel and extended special channel band. TV-IF amplifier with surface acoustic wave filter (quasi parallel sound technique). Sound-IF amplifier with ceramic filter and FM demodulation. Radio FM superheterodyne receiver FM 8 circuits and 1 ceramic filter. AM dual superheterodyne receiver, 7 circuits and 2 ceramic filters.
Euronorm socket: (SCART socket)	RGB input - RGB output

Television	VHF and UHF:	48	...	867.20 MHz
frequency bands:	Tuner ranges:	48	...	143.7 MHz
		143.8	...	467.6 MHz
		467.7	...	858 MHz
IF 38.90 MHz (OIRT 38.00 MHz, FR 38.9 MHz)				
symmetric RSB filter				
Television	CCIR, OIRT and FR system, B, G and H			
standard:	standard, 625 lines, 25 full pictures/sec			
	RF picture carrier amplitude modulated			
	vestigial side-band technique (A5, negative, in FR positive)			
	RF sound carrier frequency modulated (F3, in FR AM). In I and D/K systems only picture carrier measurement and picture check possible. With option for systems I and D/K sound carrier measurements and sound check also possible.			
Oscillator				
interfering voltage:	TV	< 46 dB μ V,	radio	< 20 dB μ V
Freq. measurement:	Indirect through frequency setting			
Frequency spacing:	TV	50 kHz;	radio FM	25 kHz, AM 1 kHz
Housing:	Aluminium with plastic sheathing, with hinged carrying handle and front cover.			
Weight:	11 kg	with front cover		
	12 kg	with nickel-cadmium batteries		
Graphic controller:	512 x 256 dots			
RF proofness:	TV for E = 1 V/m indication,	UHF	< 5 μ V	
	VHF (47 ... 470 MHz)	< 2 μ V		
	Radio FM	< 5 μ V,	AM	< 2 μ V
RF input:	IEC socket, 75 Ohm TV/radio and IF with isolating capacitor			
	RF max. 132 dB μ V, DC 100 V			
RF input divider:	RF divider loss (max. 70 dB)			
	10 dB, 20 dB, 40 dB			
IF divider:	IF divider attenuation 0 ... 24 dB			
	in stages of 0.5 dB			
Headphone connection:	Stereo jack-plug, 3.5 mm (stereo in radio mode only)			
LCD display:	16-digit LCD indicator for channel, frequency, customer data memory, status, RF divider, battery and level			



Measuring range: TV 30 ... 132 dB μ V
Radio 20 ... 122 dB μ V
IF-TV/radio 60 ... 132 dB μ V

Measuring accuracy: TV < $\pm$ 1.5 dB, radio FM/AM < $\pm$ 2.0 dB
at + 23°C, input divider 10 dB

Measurement amplifier: Selective measurement amplifier with
Sample and Hold on TV and mean value indicator for radio and peak value measurement on graphic.
TV-IF 38.9 MHz (38.0 MHz with OIRT)
Radio-IF 10,7 MHz
Bandwidths (-3 dB)
1 MHz with TV picture carrier and graphic (TOTAL, VHF and UHF)
200 kHz with TV sound carrier, FM radio and graphic (NARROW and FM)
9 kHz for AM radio

Microcomputer: 8 Bit microcomputer SAB 80535
up to 64 kByte EPROM, 2 kByte RAM

Mains power supply: 195 - 345 Volt, 50 - 60 Hz
TV 26 VA, radio 8 VA

Power supply unit: Power supply unit 220 V, 50 Hz - 16 V DC
Transformer protection category I (all accessible conductive parts linked to non-fused protective earth)
Switching mode power supply unit, switching freq. 40 kHz, 5 V / 12 V / 33 V
Switching elements not needed for actual measuring operation are switched off (extends operating time in the battery mode).

Options: Videotext decoder / Teletext decoder
Graphic controller
Printer
RS 232 interface

Level display: Digital: 30 - 132 dB μ V on TV
20 - 122 dB μ V on radio
Analogue: relative 18 dB

Level measurement: TV CCIR standard sync pulse or porch
 (porch for over-modulation control)
 TV FR standard porch
 Radio FM signal level, AM signal level
 with modulation (AM mean value)
 Blend in of horizontal keying space (reflection assessment).
 Panorama display peak value measurement

Radio frequency ranges: AM-LW/MW 0.150 ... 1.650 MHz
 SW 5.900 ... 6.500 MHz
 FM-VHF 87.00 ... 108.00 MHz
 FM-IF 10.70 MHz

Return loss: TV >14 dB, radio >18 dB (HF divider 10 dB)

Stereo decoder: PLL decoder, stereo indicator in display
 (radio)

Temperature range: Full functional range 0°C to +40°C
 -10°C level correction TV -2dB,
 radio -3 dB
 +40°C level correction TV +2dB,
 radio +2 dB

Sound carrier measurement: All sound carrier measurements, except at
 end of band (S2, ES34, ~E68) are possible
 within the TV frequency bands with keys
 "SC1", "SC2" (internal standard switch-over
 5.5, 5.75, 6, 6.5 MHz) or directly through
 frequency input.

Sound reproduction: Loudspeaker mono, 1.5 W
 Headphones ≥ 8 Ohm 1.5 W (stereo radio)

Video inputs/outputs: BNC socket
 SCART socket
 RGB input / output

Accessories: Measurement cable 75 Ohm

Technical description

Portable selective TV/Radio Meter with black/white monitor and loudspeaker for audio and video reproduction. Mono loudspeaker for TV and radio.

Control and input of channel, frequency, video/audio carrier and display over 35 button keyboard.

RF-input socket IEC socket DIN 45325

RF input 75 Ohm TV/radio and IF with isolating capacitor
RF max. 132 dB μ V, DC 100 V

RF input attenuator

RF attenuation 0...70 dB in increments of 10 dB

IF attenuator

IF attenuation 0...23 dB in 0,5 dB increments

Video In/Output

SCART socket, 1 V/75 Ohm positive, without audio carrier

D2 MAC input (option) BNC socket

Stereo headphones

Jackplay socket 3,5 mm (only stereo radio)

Printer (option)

Data transmission parallel, 24 signs/line and graphic, colour band EPSON ERC-09 black for M-180

Normal paper: wood-free W 57 mm, diam. max. 62 mm

Display (digital) LCD 16-place

monitor 23 cm (9")

Graphic controller (option) 512 $\times$ 256 dots

TV frequency range

(unit intern frequency division)

VHF 47-116 MHz B I E 2 - E 4

116-298 MHz USB S 1 - S 2

116-298 MHz USB S 3 - S 10

116-298 MHz B III E 5 - E 12

116-298 MHz OSB S 11 - S 20

Hyperband 298-470 MHz ESB S 21 - S 34

(12 MHz channel grid)

UHF 467,7-862 MHz B IV/V E 21 - E 68

IF 38,9 MHz (OIRT 38,0 MHz)

Tuning after input of channel from above bands or frequency.
One can tune from the set frequency or channel using the +/- button. (except in IF mode)

Radio frequency ranges

AM-LW/MW 0,150...1,650 MHz SW 5,900...6,500 MHz

FM 87,00...108,00 MHz FM-IF 10,70 MHz

Tuning after input of frequency and fine tuning over whole range (except IF)

Frequency reference grid TV 50 kHz, Radio 25 kHz, AM 1 kHz

Level measurement

TV: Synchron impulse or back porch (black) for over-load control, level in dB μ V, standard L back porch (black)

Radio: FM signal level in dB μ V, AM signal level with modulation in dB μ V (AM mean value)

Panorama display maximal value measurement

Level display

relative value: analogue with moving-coil instrument

absolute value: digital with display

TV audio carrier measurement

All audio carrier measurements are possible inside the TV frequency bands with buttons "TT 1", "TT 2" or through direct frequency input

RF screening

TV for E = 1 V/m display, UHF < 5 μ V,

VHF (47...470 MHz) < 2 μ V, radio FM < 5 μ V, AM < 2 μ V

Temperature range

fully functional: 0°C - + 40°C

limited functional: - 10°C - + 40°C

Power supply

220 V $\pm$ 10%, 50 Hz, TV 26, Radio 8 VA, transformer protection class 1 (all accessible live parts linked to a protective earthed conductor).

battery operation

switchable to battery operation, 10 $\times$ 1,25 V nickel-Cadmium cells (with built-in recharger; batteries are not in delivery scope). Battery operation: ca. 2 hours

Housing

plastic-coated aluminium, swivelling carrying handle, stand feet and cover

Accessories

75 Ohm cable, adapter plug 75 Ohm IEC socket/socket

Mikro-Computer

8 bit micro-computer 80535, 64 KByte ROM, 2 KByte RAM

Meter functions

direct key-in of channel or frequency for TV and frequency
key-in for radio

search for TV- or radio programmes according to pre-set minimal levels

measurement of all TV-, Radio and IF frequencies
automatic level measurements of tuned-to channels or frequencies

- 80 memory positions for TV and radio programmes
- automatic level measurement of stored TV and radio programmes
- measurement of synchron pulse or back porch on TV range
- blend-in of horizontal blanking interval (for reflection assessment)
- TV stereo and two-tone measurement
- digital level and frequency display, analogue level display
- LCD display for channel, frequency, RF- attenuator, status, battery, memory and level

Technical Data

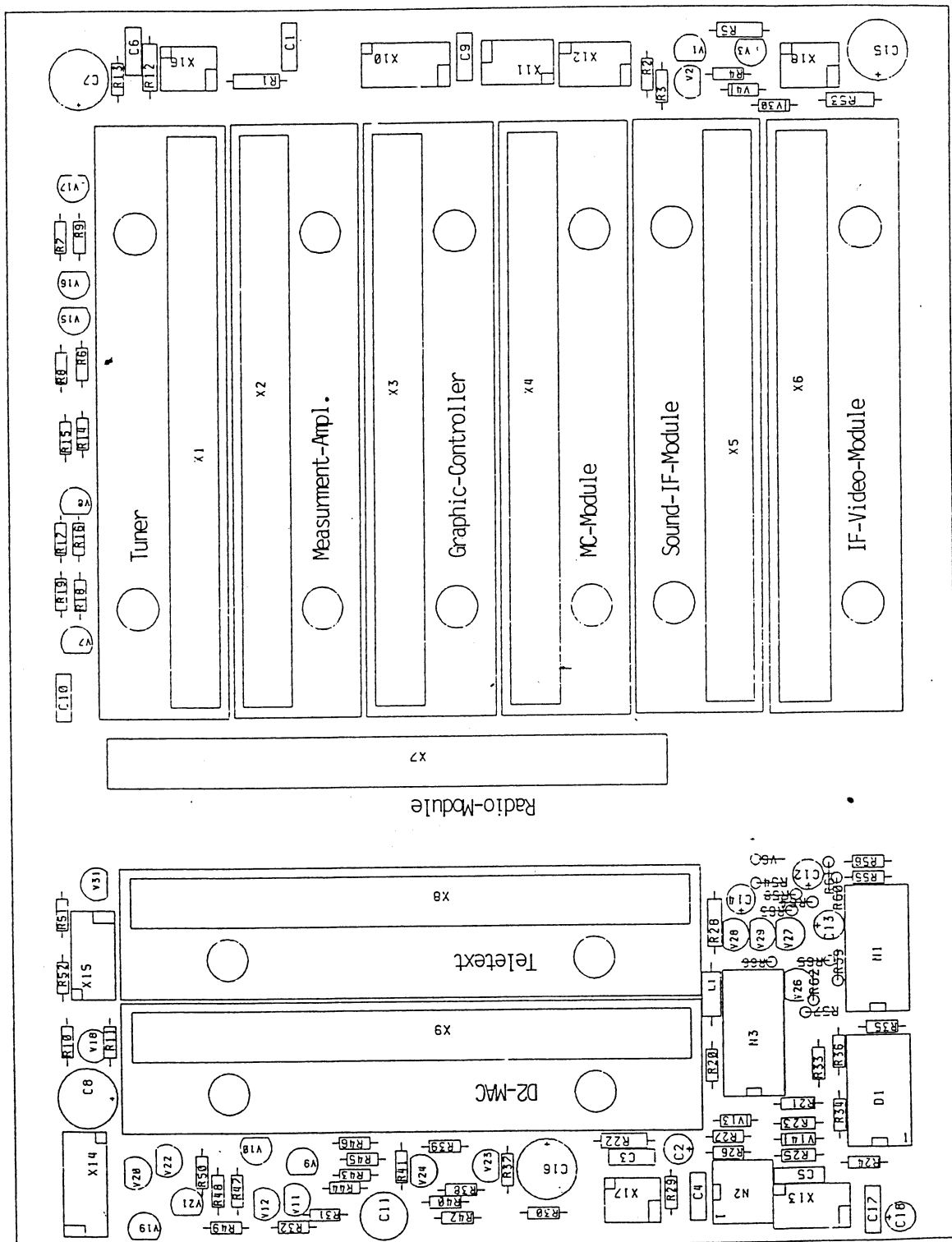
Technical Data			MFK 55/I	MFK 55/B	MFK 55	MFK 55/D	MFK 55/F	MFK 55/G	MFK 55/H
Type			208242	208217	208237	208219	208222	208228	208221
No.									
CCIR-Standard			B + G + H ¹⁾			OIRT B + G + D + K	France B + G + L		England B + G + I
Option ²⁾ (integrated)	videotext		•	•	•	•	-	•	•
	graphic controller		•	•	•	•	-	•	•
	printer		•	•	•	•	-	•	-
	D2 Mac decoder		•	-	-	-	-	•	-
	AM-VSB-demodulator		•	-	-	-	-	•	-
	RS 232 interface		•	-	-	•	•	•	-
Menu ³⁾			d	d	e	e	f	f	e
reception range TV	IF	MHz	47-862 VC 38,9 AC, 33,4 FM AC ₂ 33,158 FM			47-862 VC 38,0 AC, 31,5 FM AC ₂ 32,5 FM	47-862 VC 38,9 AC, 33,4 FM AC ₂ 32,4 AM		47-862 VC 38,9 AC, 32,9 FM AC ₂ 33,4 FM
	Video		•			•	•		•
reception range Radio	AM	MHz	0,15-1,65 5,9-6,5 87-108			0,15-1,65 5,9-6,5 64-75 + 87-108	0,15-1,65 5,9-6,5 87-108		0,15-1,65 5,9-6,5 87-108
	FM ZF		10,7			10,7	10,7		10,7
Measuring range	TV	dBµV				30-132			
	Radio					20-122			
	IF					60-132			
Measurement precision	dB		< ± 2 (23°C)						
Dimensions	mm		W 365 / H 205 / D 306 / cover 30						
Weight with/without batteries	kg		11 / 12						

¹⁾ on CCIR standard I and D + K video carrier measurement and video assessment are possible
²⁾ further models with integrated options on request.

³⁾ d = German, e = English, f = French

Options

- videotext decoder.
- graphic controller for panorama display.
- graphic display with cursor control on screen coupled to panorama display, level and frequency indication of cursor position.
- 4 possible panorama displays of TV ranges (broad band from 44 - 867 MHz, rangewise 44 - 467 MHz, 467 - 863 MHz and narrow band display)
- panorama display of FM radio range 87 - 108 MHz.
- graphic printer for protocolling of measured values or hardcopy of panorama display.
- D2 MAC decoder - with own video input for picture assessment in conjunction with MSK 11.
- AM vestigial side band demodulator (for cable processed D2 MAC)
- RS 232 interface (with demo-software).
- software packet for computer controlling (in preparation).

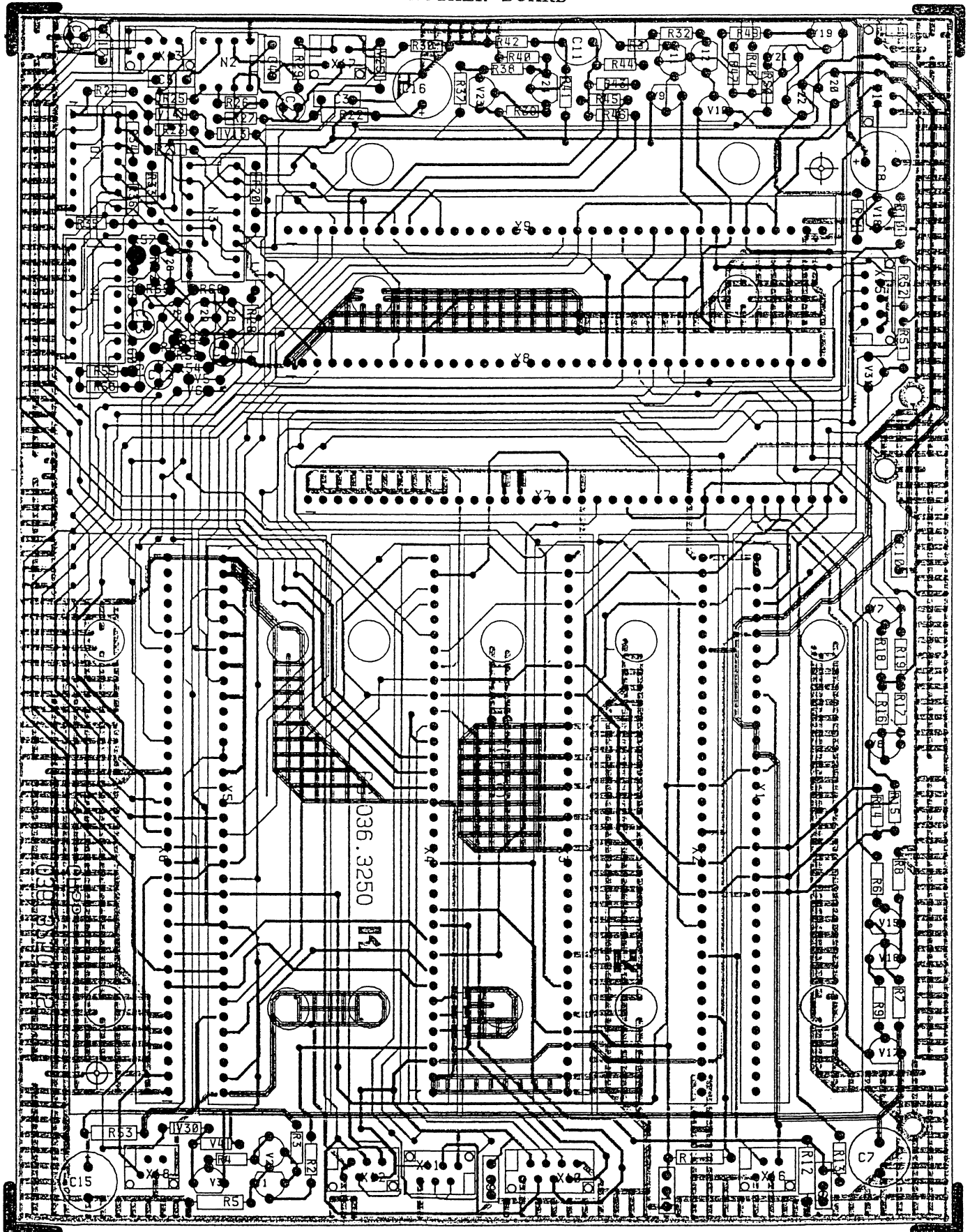


MC-Service

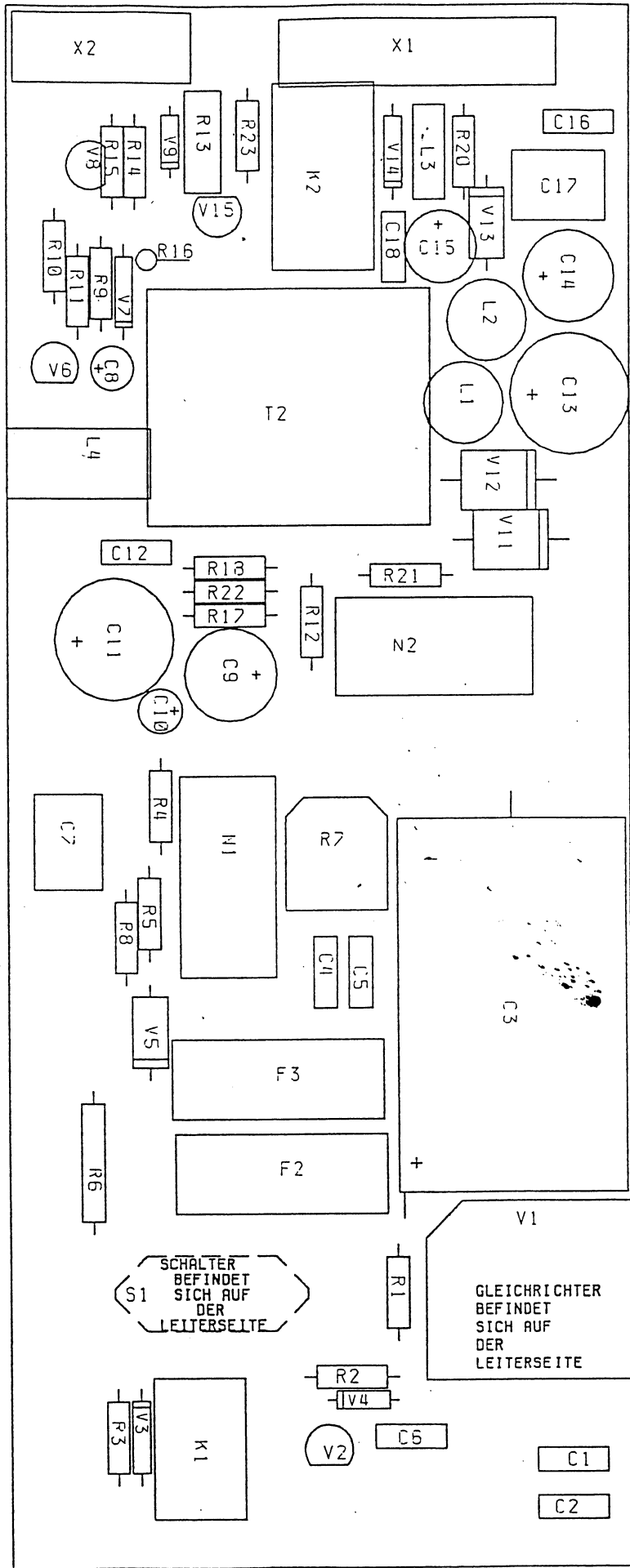
GP55A-L

1992	DATUM	NAM	BESTUECKUNGSPLAN	BEZ.	SIGNALTEIL - 55A	KATEK GMBH BAHNHOFSTR. 108 D-6217 GRASSAU
01.03.93	ME			MAT-NR.	036 3250 (A)	

SIGNAL MOTHER BOARD







MC-Service

NT55-L

1992	001111	NAME
BEF. 2.4.	KOLLER	
INDEX	A	1437/90
B	1736/92	

BESTUECKUNGSPLAN BAUTEILSEITE

BEZ. POWER SUPPLY 55

MAT.-NR.
RG

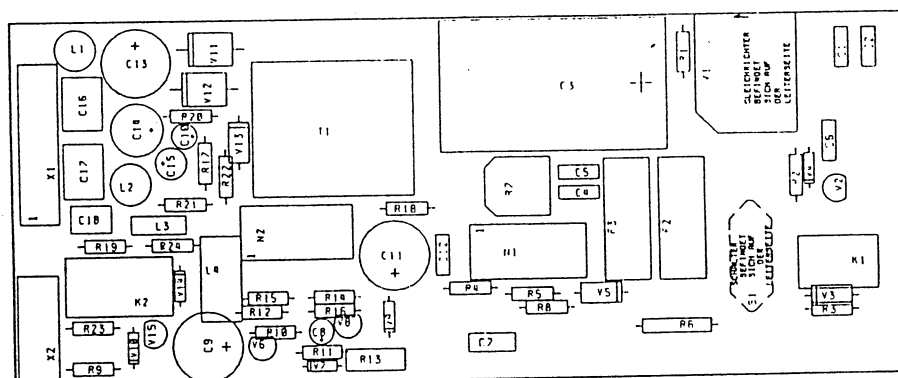
KLEIN	GRÖßE
BRUNNENSTR. 108	D-82127 GRASSAU
1.52:1	4

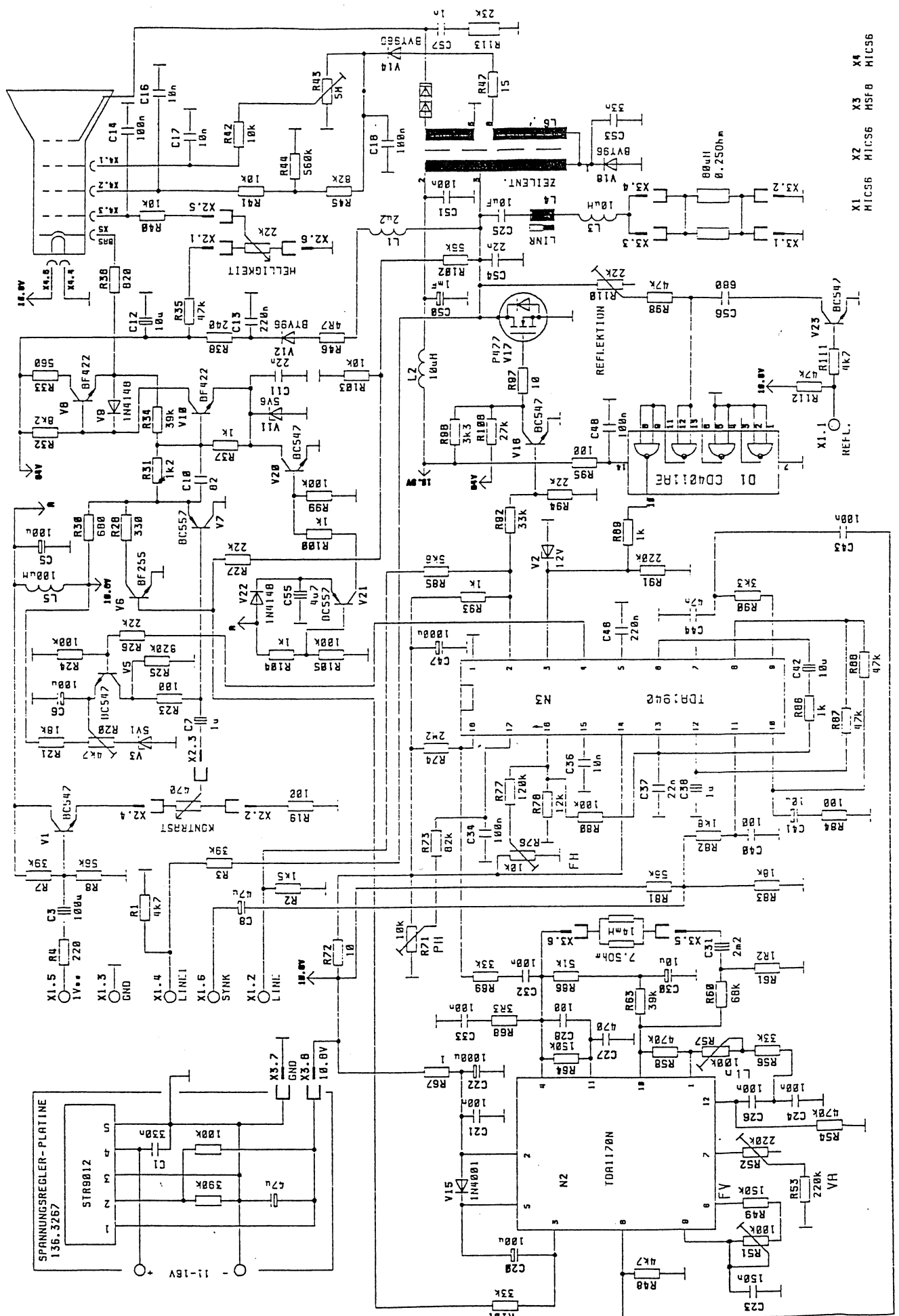
INSTRUCTIONS FOR ALIGNMENT OF POWER SUPPLY UNIT

Battery voltages

monitoring circuit: 1.Connect external power supply to X2/5.
2.Disconnect batteries and mains plug.
3.Alter external source and align R13 so
that the unit switches off at 8,7V.

Charging voltage: 1.Adjust R7 so that charging voltage at
N1/pin2 is +15V.





X1 HIC56
X2 HIC56
X3 HSF8
X4 HIC56

1998	TAG	NAME
BEARB.	14.03	KOLLER
RENDER.	1777/82	OSTERHOF

KOTTHREIN
ANTENNEN · ELECTRONIC
COMMUNICATIONS-ANLAGEN
POSTFACH 260 D-8200 ROSENHEIM 2

MFK 55

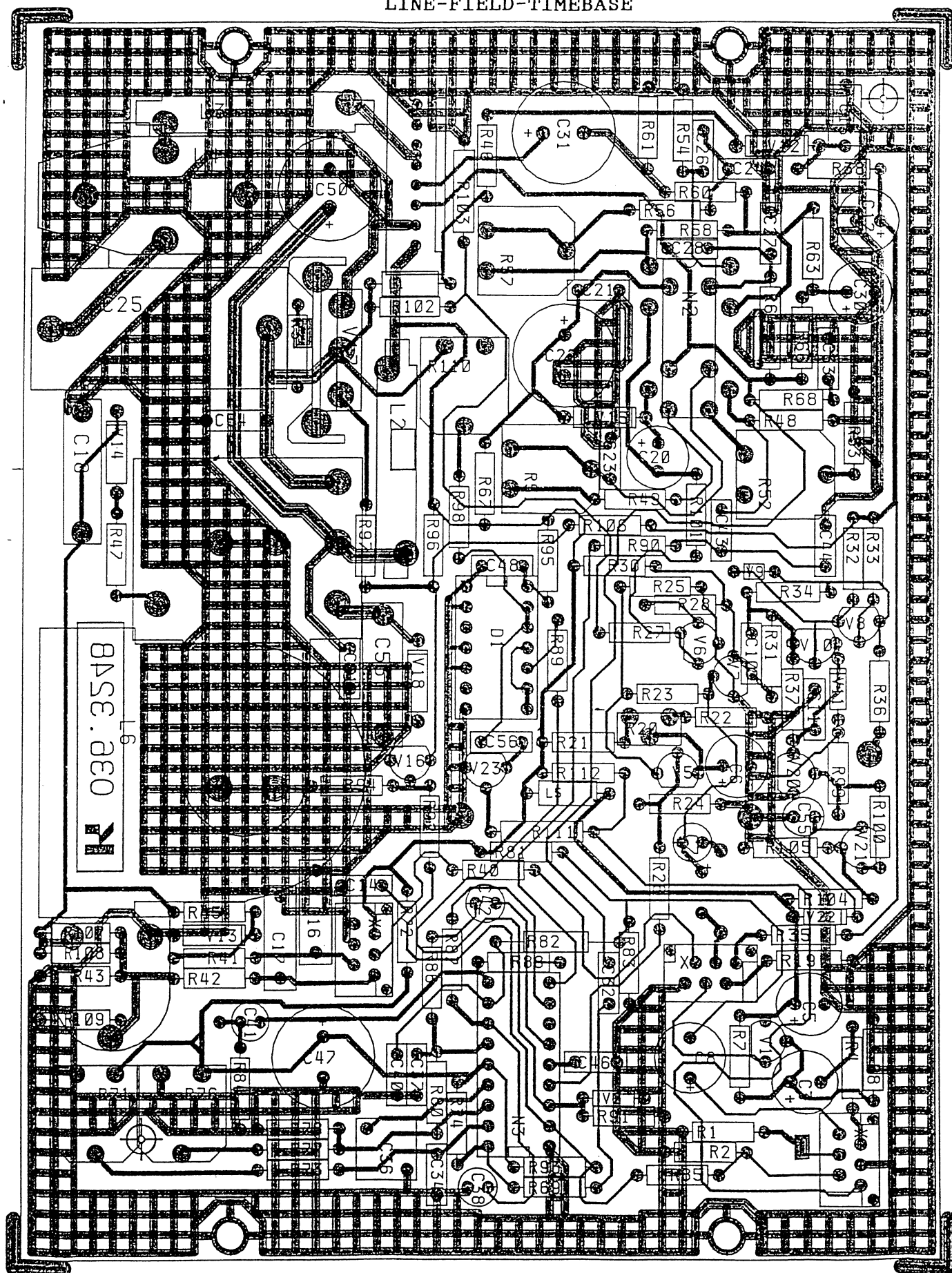
LINE-FIELD-TIMEBASE

KIPP55-D

MC-Service

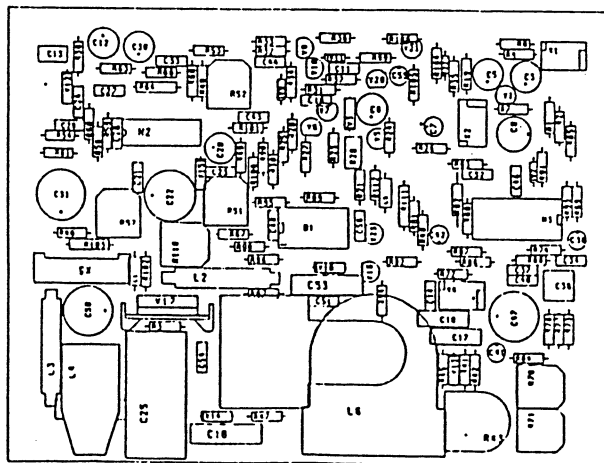
BLATT

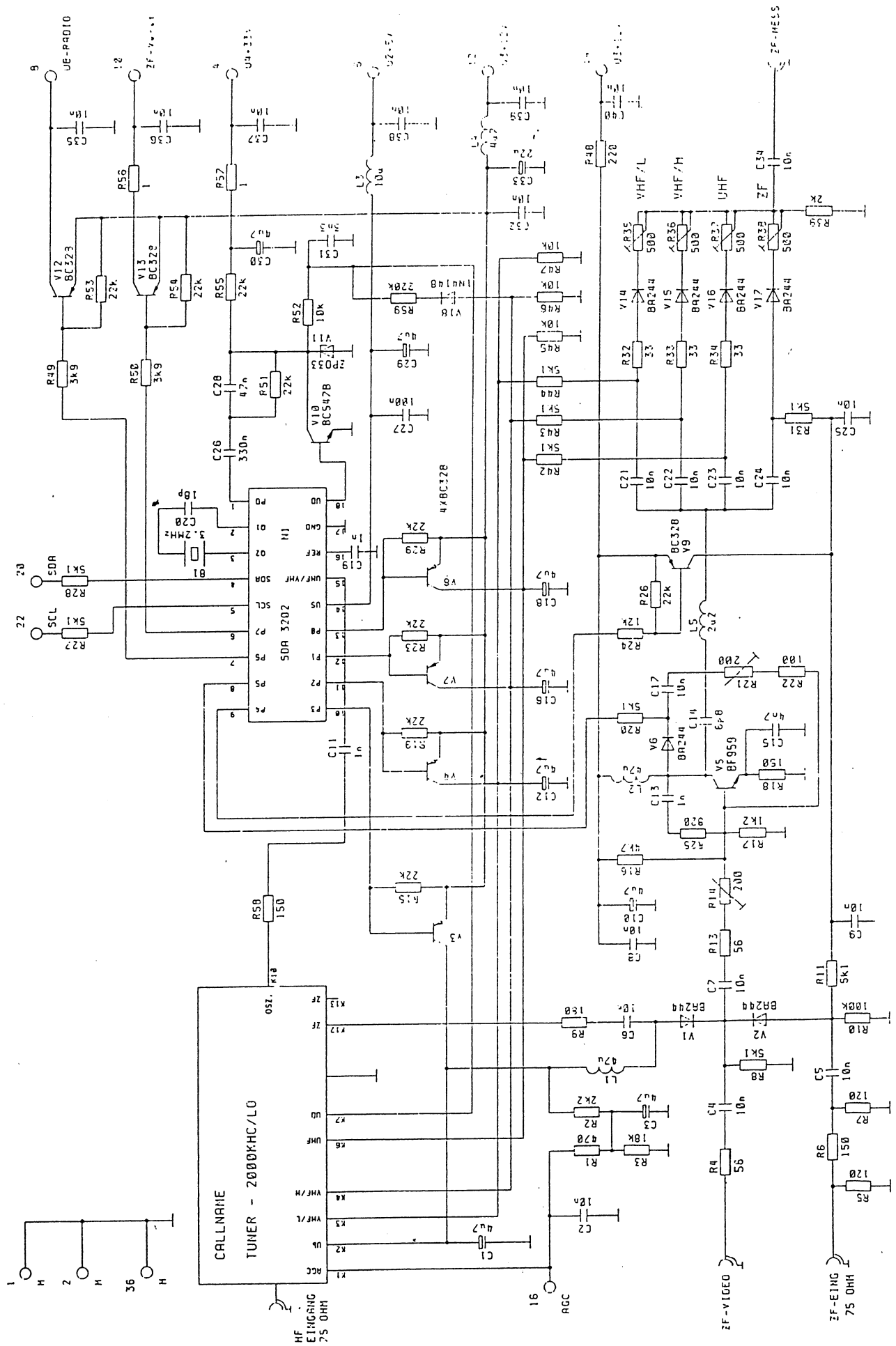
LINE-FIELD-TIMEBASE



INSTRUCTIONS FOR ALIGNMENT OF LINE AND FIELD TIMEBASE

- Line Frequency:** 1.Short circuit R82 to ground.
2.With the adjustment control R76 ,adjust so that the picture runs through slowly.
3.Remove the short circuit.
- Line Width:** 1.Display crosshatch with circle test pattern.
2.Adjust L3 so that the picture has the correct width.
- Line Phase:** 1.Adjust picture line symmetry with R71.
- Line Linearity:** 1.Adjust L4 so that the picture has the correct shape.
- Field Frequency:** 1.With the adjustment control R51 ,adjust so that the picture stands still.
- Field Amplitude:** 1.Display crosshatch with circle test pattern.
2.Adjust R52 so that the picture has the correct height.
- Field Linearity:** 1.Display crosshatch with circle test pattern.
2.Adjust R57 so that the picture has the correct shape.
- Porch:** 1.Press the key "PORCH".
2.Set R110 so that porch is seen on left side of the picture.
- Porch level clamping:**1.Set contrast and brightness to minimum.
2.Adjust the potentiometer R20 so that the picture is just dark.
- Focus:** 1.Adjust potentiometer R43 so that picture is sharp.





1930	TAG	NAME
BEARB.	19.01.	LA/KL
ANDER.	1610/91	KR/US

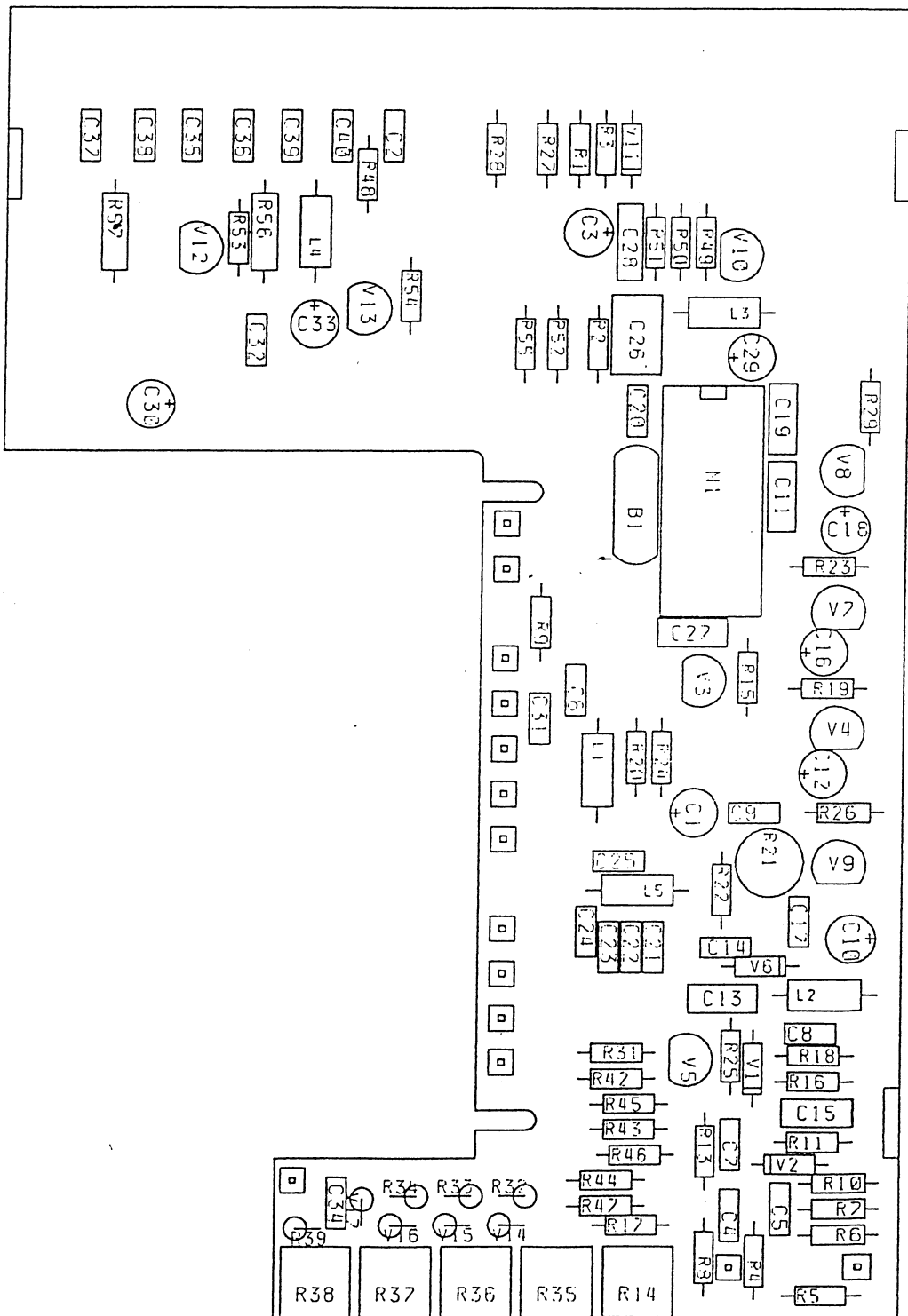
KATHREIN
 ANTENNEN · ELECTRONIC
 COMMUNICATIONS-ANLAGEN
 POSTFACH 260 D-8200 ROSENHEIM 2
 TEL. 089 31 / 104-0

BEZ.: TUNER 55

TU55-D

BLATT
 1/1

MC-Service



MC-Service

TU55-1

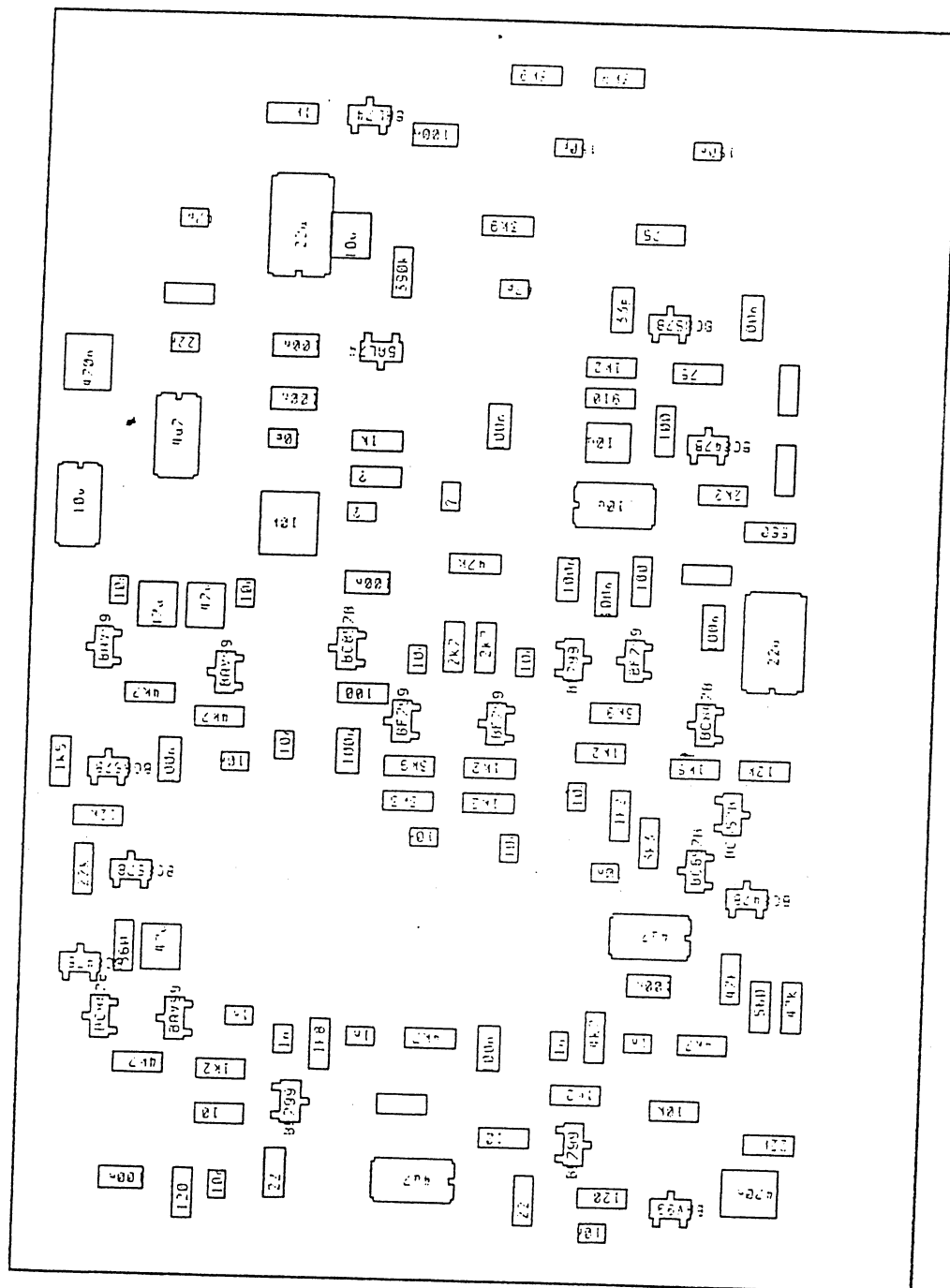
1983	DATE:	DATE
08.08.15.11.	LA	
1106		

BESTUECKUNGSPLAN

BEZ. TUNER-PLATINE MFK55

MAT-NR. 036 3286

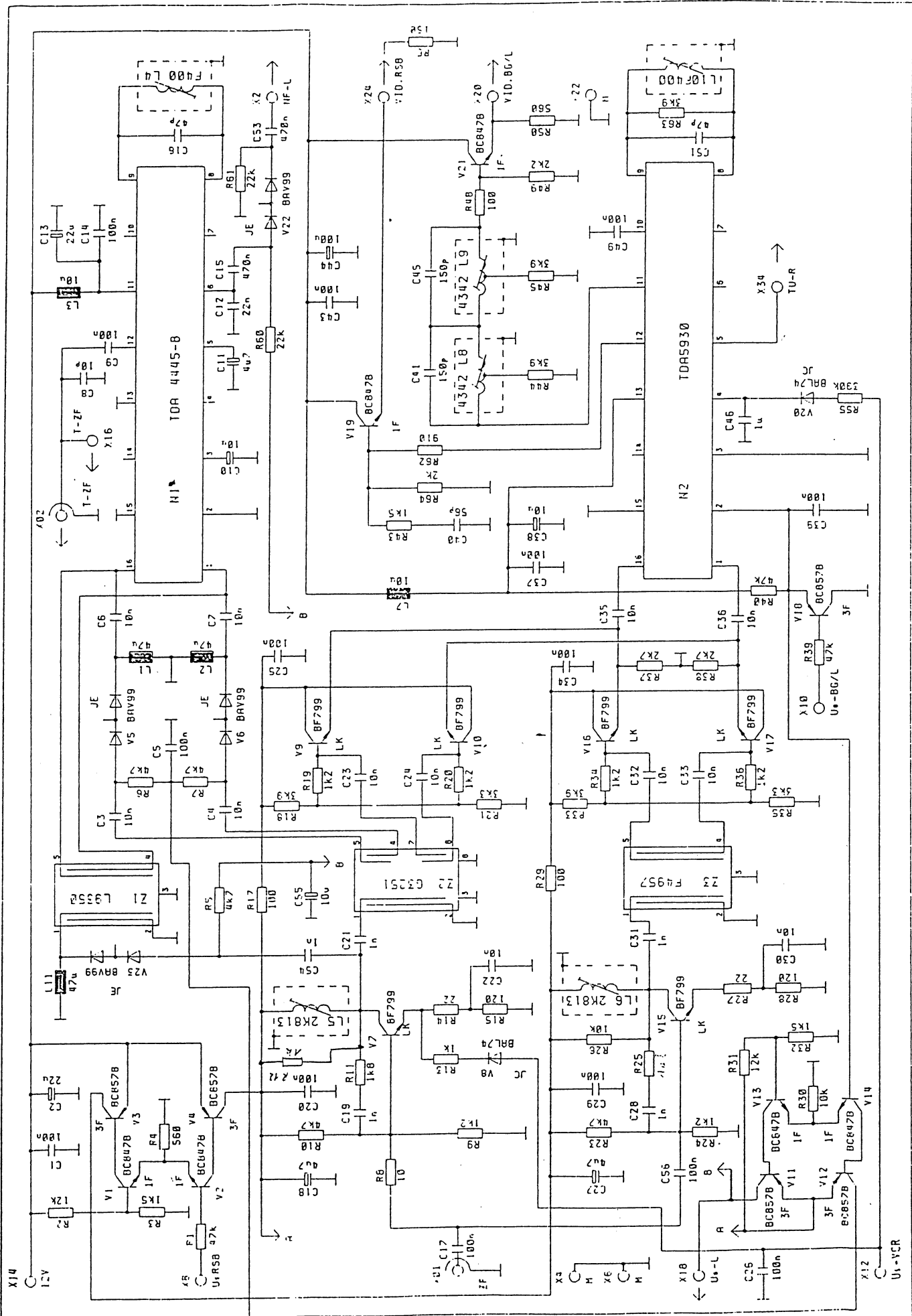
MATEN
604440519.1
0-8217 GFA55
MSTRA 1.1.11



ZFV3

RF-VIDEO/BG-L-RSB

BESTUECKUNGSPLAN LEITERS



1990	1HG	TIME
BEARD.	28.11.	11
GEPR.		
GERND.	15.01.90	15.01.90

KOTHEIM
 INTERNET - ELEKTRONIK
 COMMUNICATIONS-ANLAGEN
 POSTFACH 204 D-8220 ROSENHEIM 2
 TEL. 089 3111-111-1

MFK85
 MFK55

BEZ.: IF/VIDEO L (BQ-RSB)

MC-Service

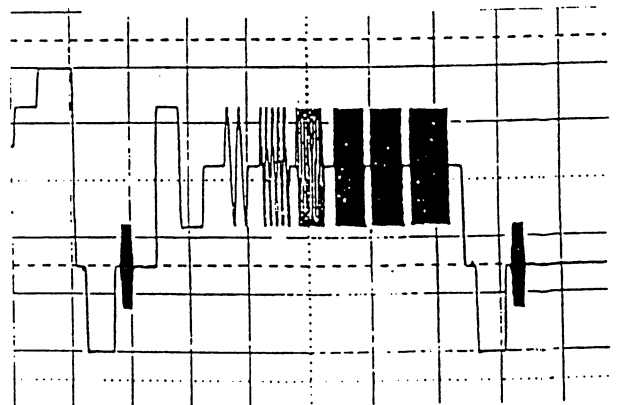
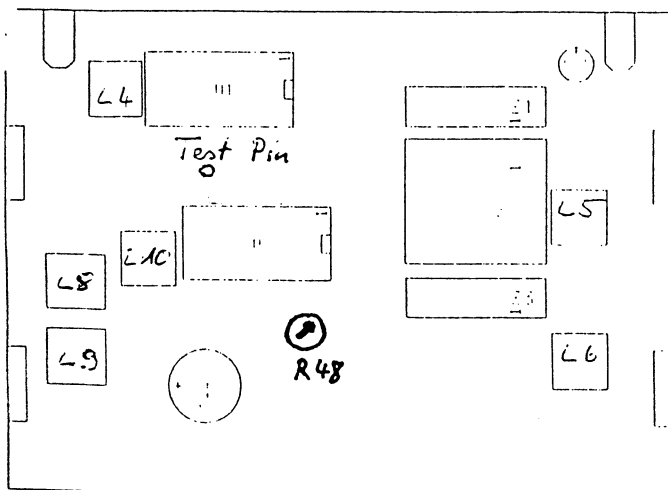
7FV3-D
 Blatt
 1

INSTRUCTIONS FOR ALIGNMENT OF
VIDEO-IF-MODULE ASSEMBLY NO:136.3174

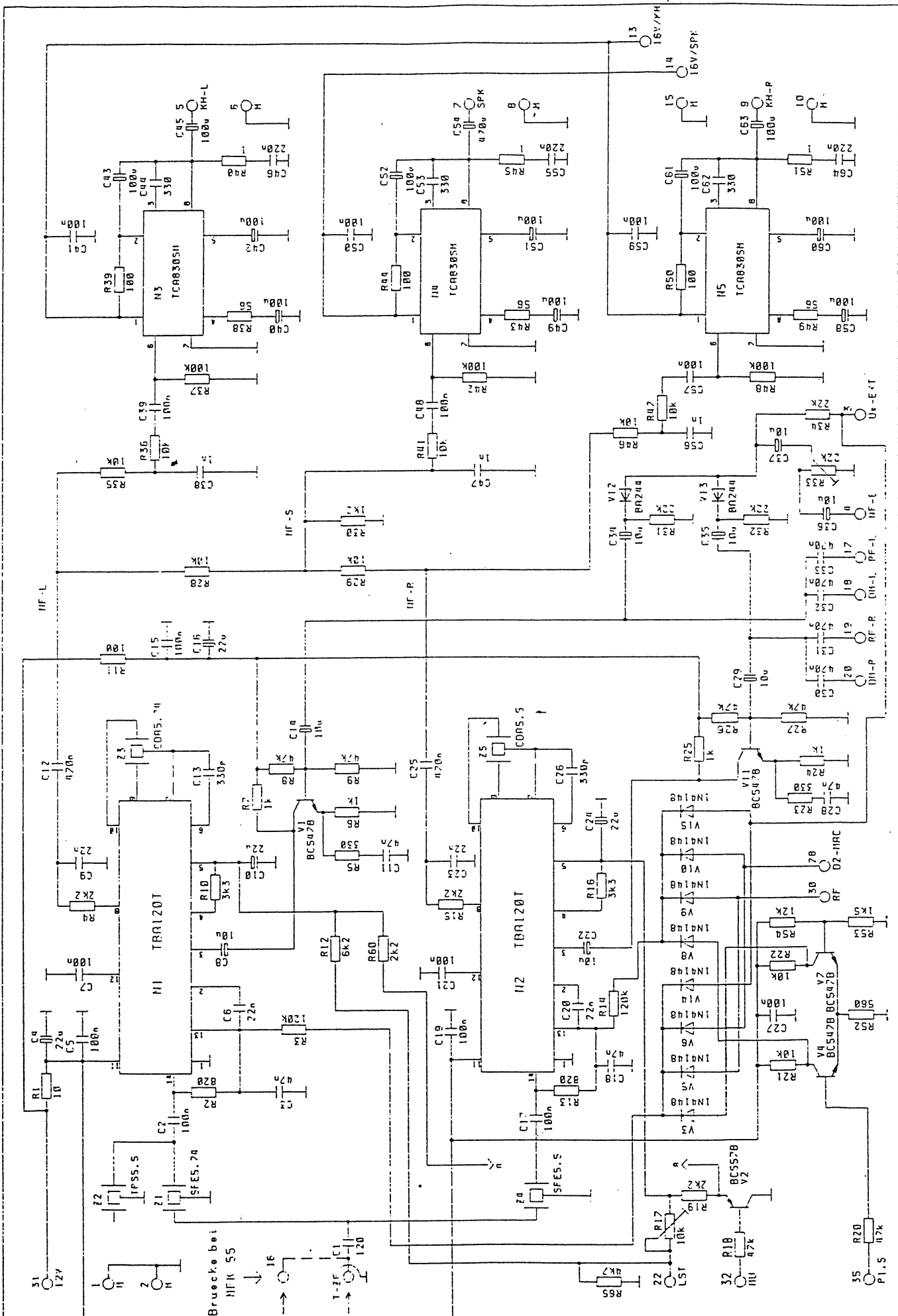
ASSEMBLY NO.167585 NO ADJUSTMENTS ARE NECESSARY.

SERVICE WORK AFTER REPLACING THE MODULE

- 1.Feed in IF-frequency modulated with multiburst,80dBuV.
Connect oscilloscope to scart-socket via 75ohm Feed Through Termination.Display multiburst signal on the scope.
- 2.Set with R48 video signal to maximum.
Connect test point to ground.
Set L10 so that the multiburst signal slopes linear from 0,5MHz (highest point) to 4,8MHz.The 5,8MHz wave is suppressed.
Disconnect wire link.
- 3.Set L5 so that the first(0,5MHz) and second(1,5MHz)multiburst waves are at the same level,but lower than the reference wave.
- 4.Adjust L8 and L9 so that the last package is at maximum and no interference is visible.
- 5.Feed in dual sound,set unit to second sound carrier reception.
Suppress intercarrier interference with L4.
- 6.The core of L6 must be settled 1,5 windings above coil metal frame.
- 7.With adjustment control R48 video signal is set to 1Vpp.



NOT DISTORTED MULTIBURST SIGNAL
0.5 MHz - 1.5 MHz - 3.0 MHz - 4.43 MHz - 4.8 MHz - 5.8 MHz



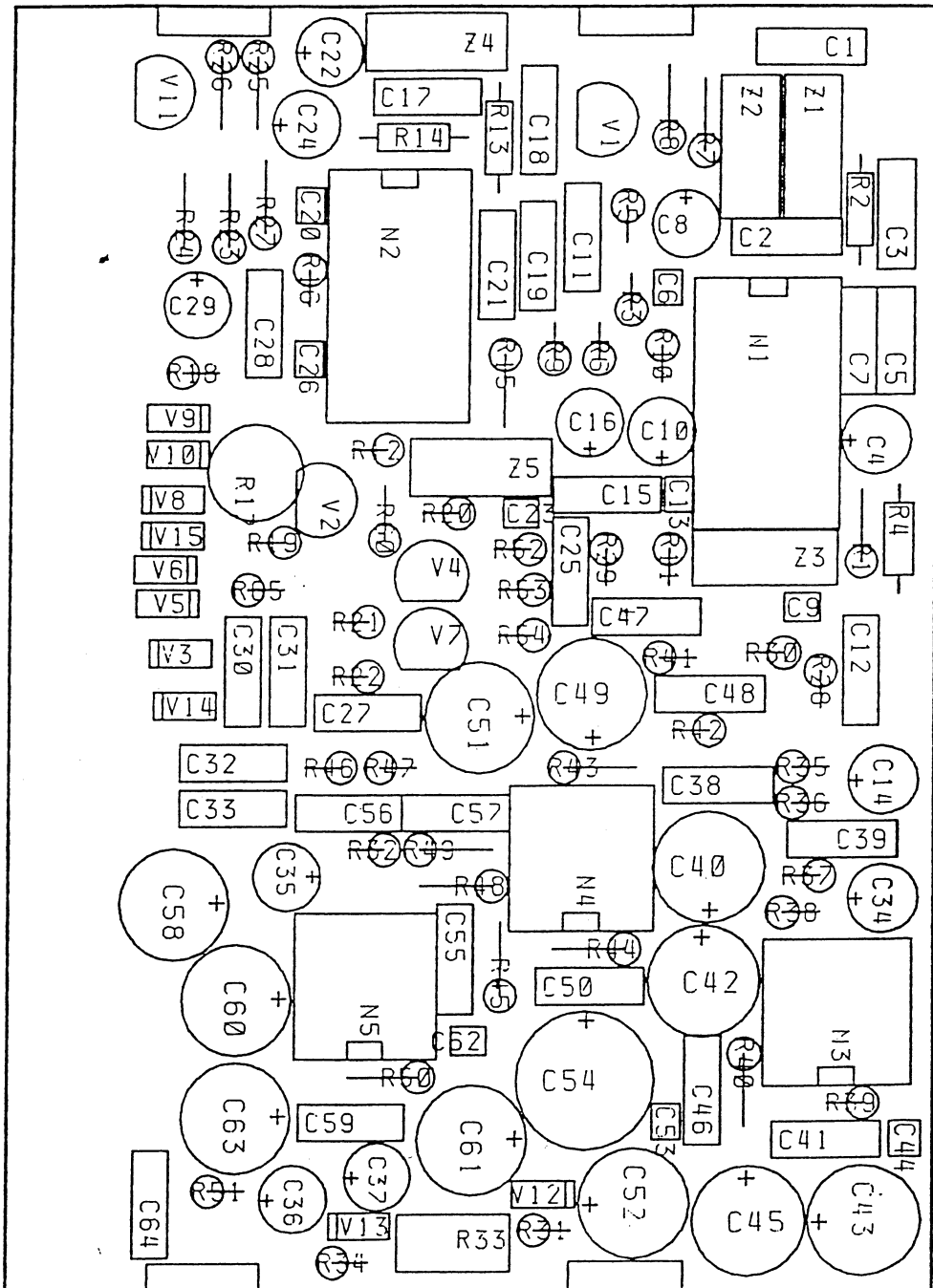
1989	TAG	NAME
BEARB.	10.08.	HE
GEPR.		

KOTHAED
ANTENNEN · ELECTRONIC

MFK 85

SOUND-IF-MODULE
MC-Service

TZF65-D



705 01 0000 22 00 00 00

1988	DATUM	NOME
BEFAB. 18. 08.	KA/HE	
GEPR.		
INDEX	A	

BEZ.	SOUND-IF-MODULE
MAT-NR.	
IC	VR.

KATZEN GMBH
BRUNNHOFSTR. 108
D-6217 GPRSSTU
INSTRAB
BLPIT
2:1
5

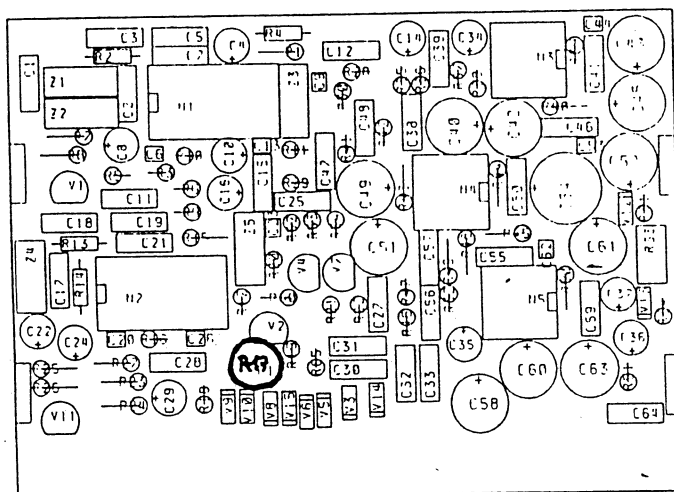
TZF85-1

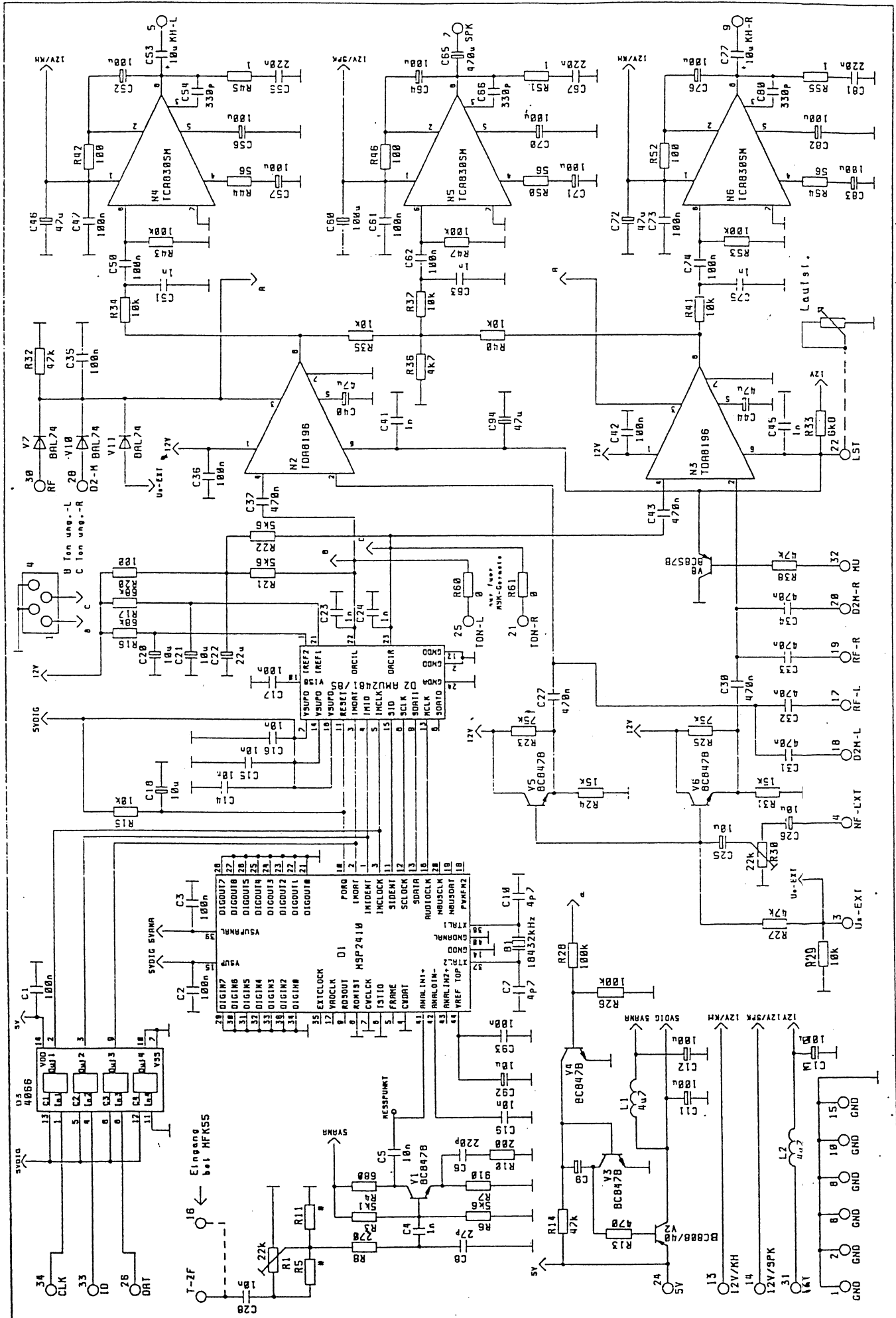
MC-Service

INSTRUCTIONS FOR ALIGNMENT OF SOUND-IF-BOARD

Left and Right

Level Symmetry: 1. Feed in 95MHz, deviation 40kHz, f-mod. 1kHz,
switch to RADIO mode, volume control nominal.
2. Connect probes of dual-trace oscilloscope to
stereo jack socket.
3. Alter R17 so that sinus waves coincide with
each other.

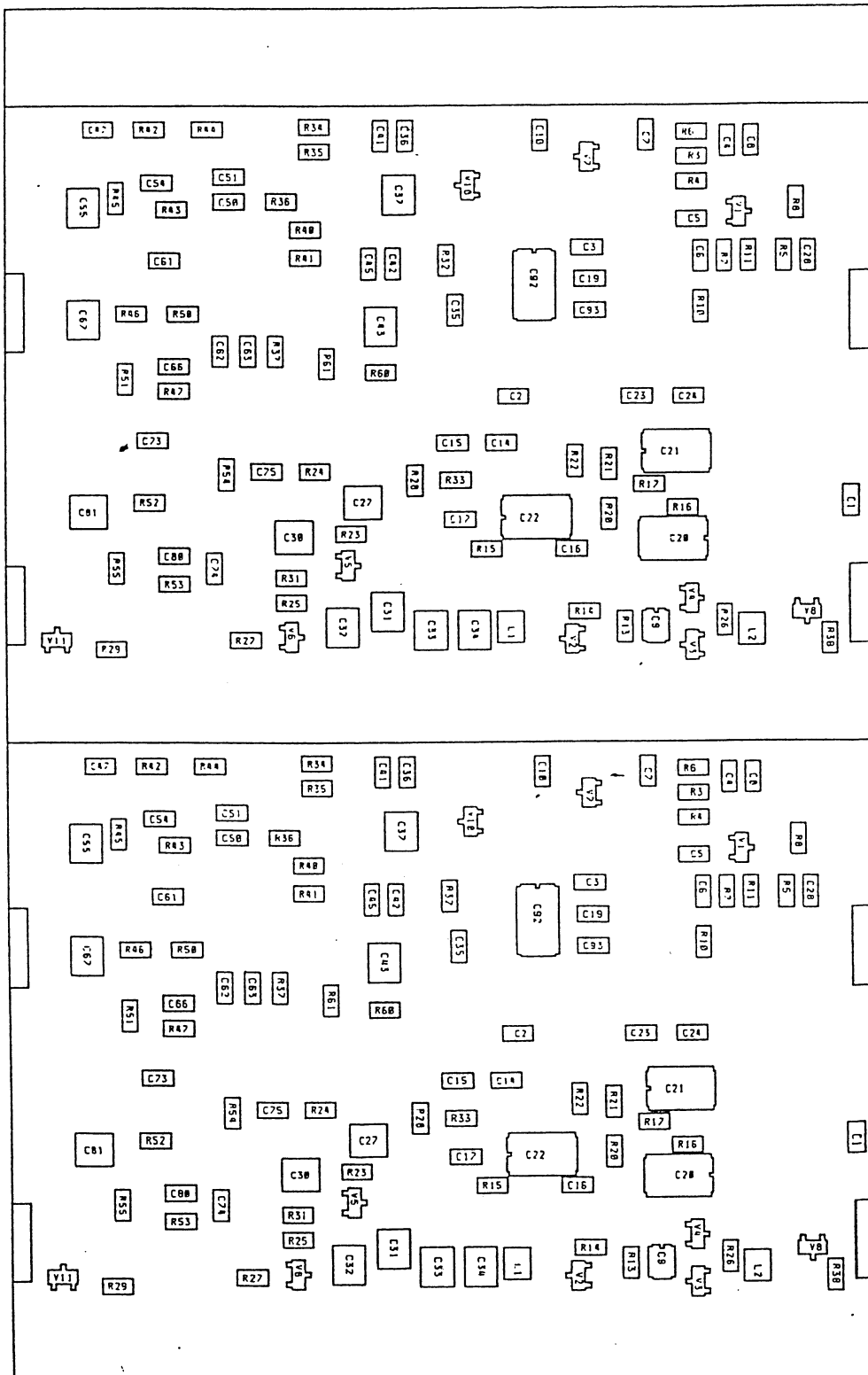




1992	TAG	NAME
BEARB.	20.08.	Ka
GEPR.		

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COMMUNICATIONS · GMBH

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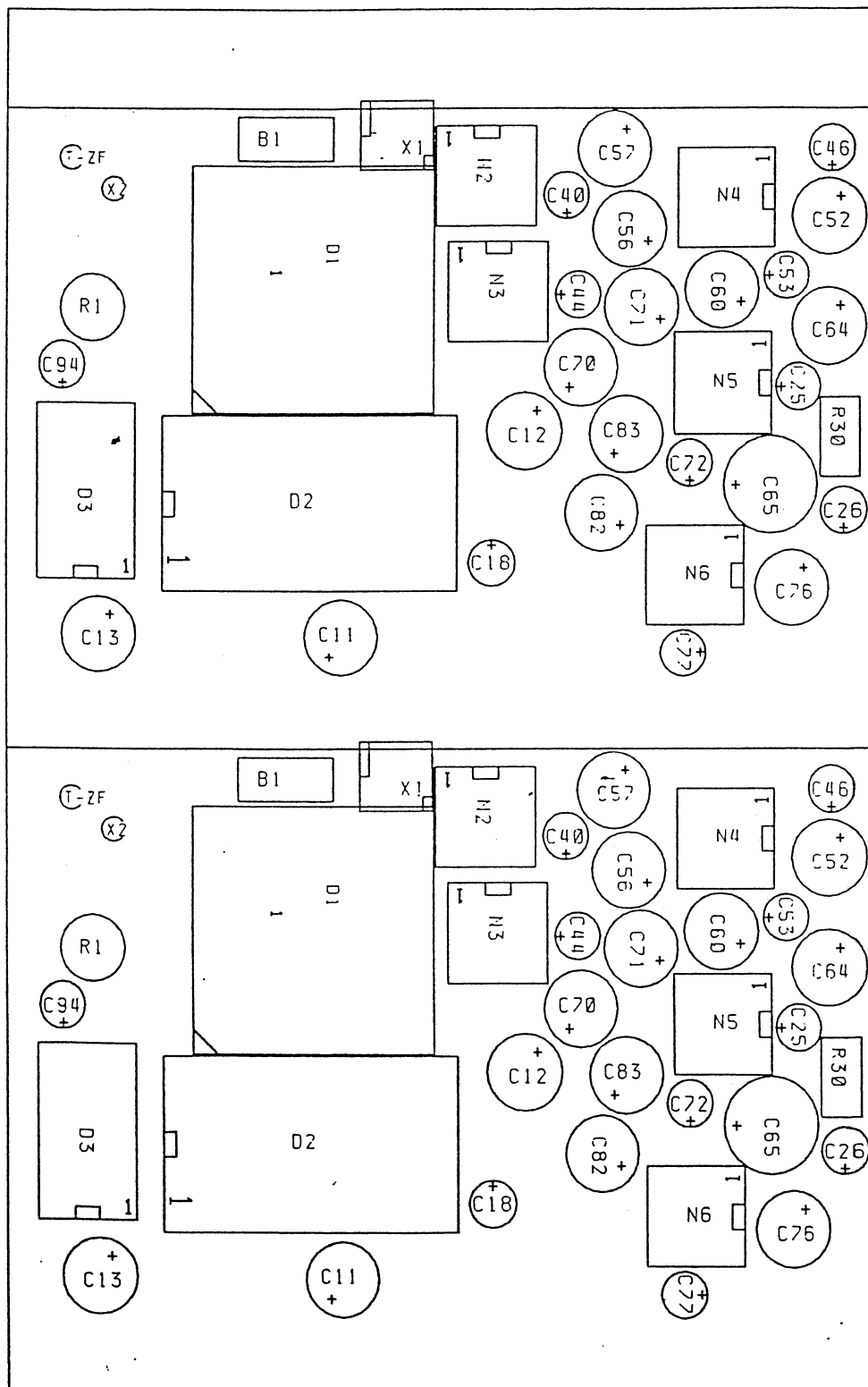
MT-L

1992	Datum	Name
BEAR0	17.09.	KA/BRE

BESTUECKUNGSPLAN LEITERSEITE

MULTISOUND-IF-MODULE

MASSTAB BLATT



MC-Service

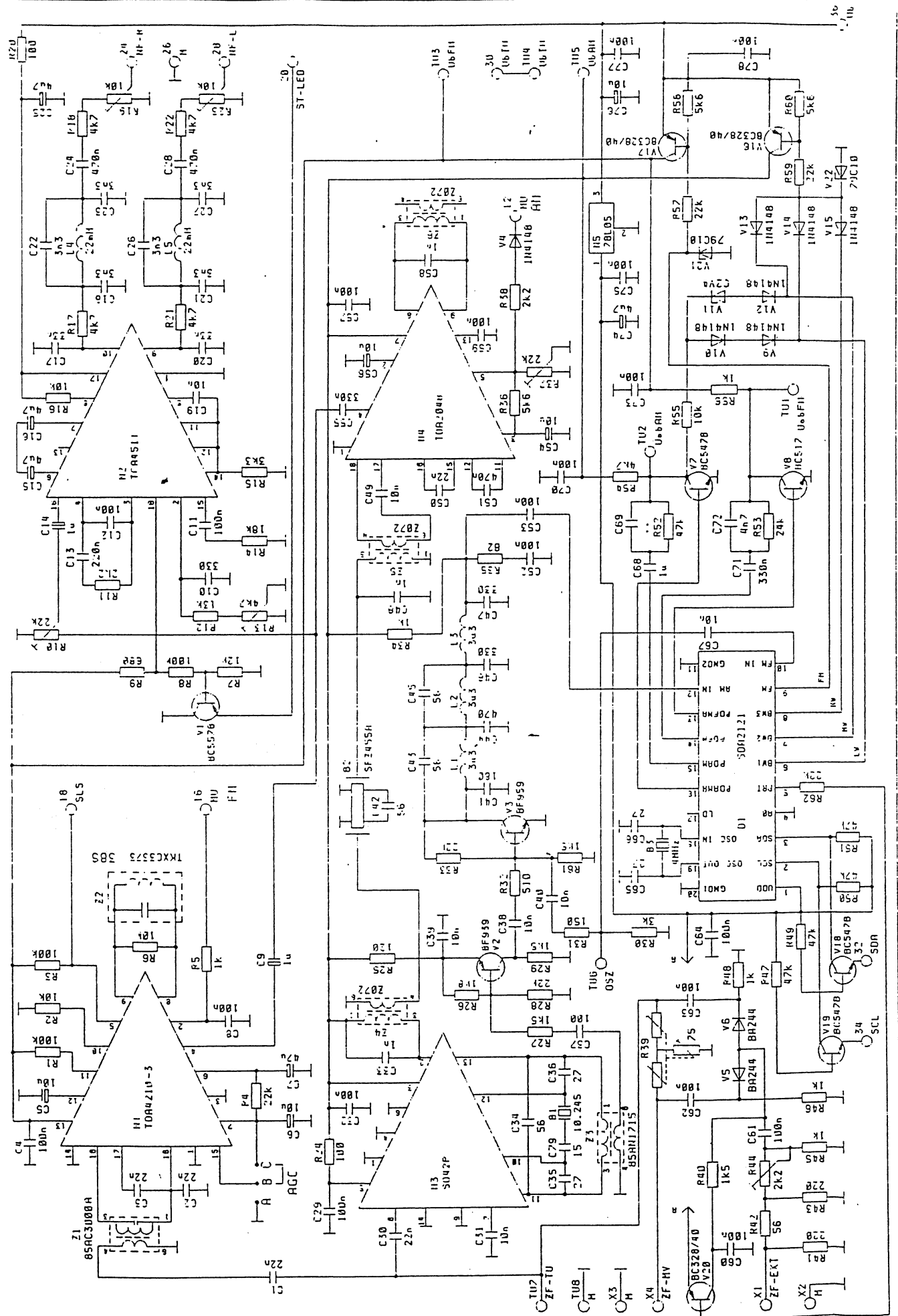
1992	DATUM	NAMEN
BEARB.	17.09.	KA/BBE

BESTUECKUNGSPLAN BAUTEILSEITE

MULTISOUND-IF-MODULE

MT-L

NRSTAB | BLATT



1989	TAG	NAME
BEARB.	03.07.	HELLWEG
GEPR.		
GEAND.	1500/91 11.01.91	OS

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COMMUNICATIONS-ANLAGEN
POSTFACH 260 D-8200 ROSENHEIM 2
TEL. 089 411 126-0

MFK 85

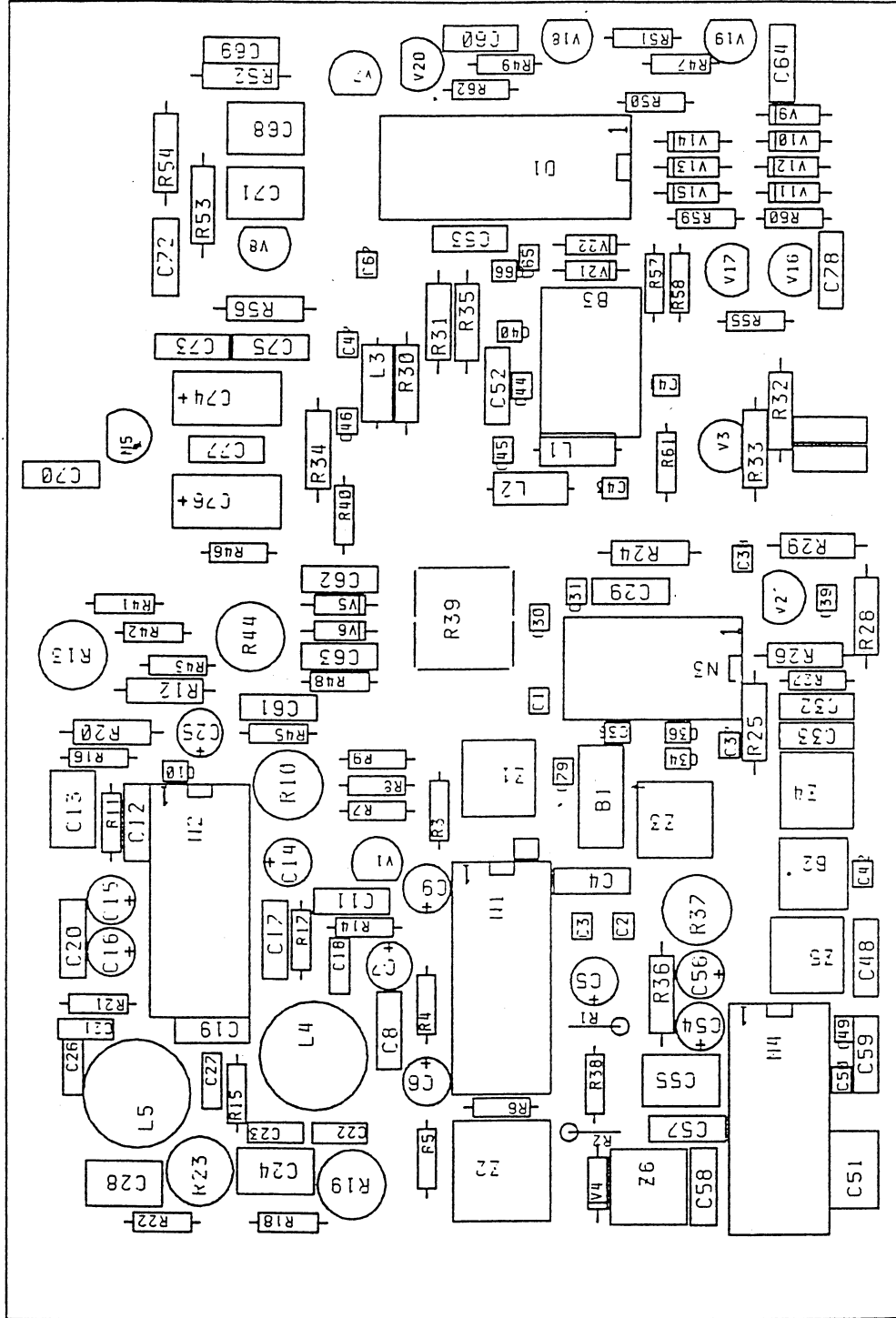
BEZ.: RADIO-ZF-PLATINE

RZF85B-0

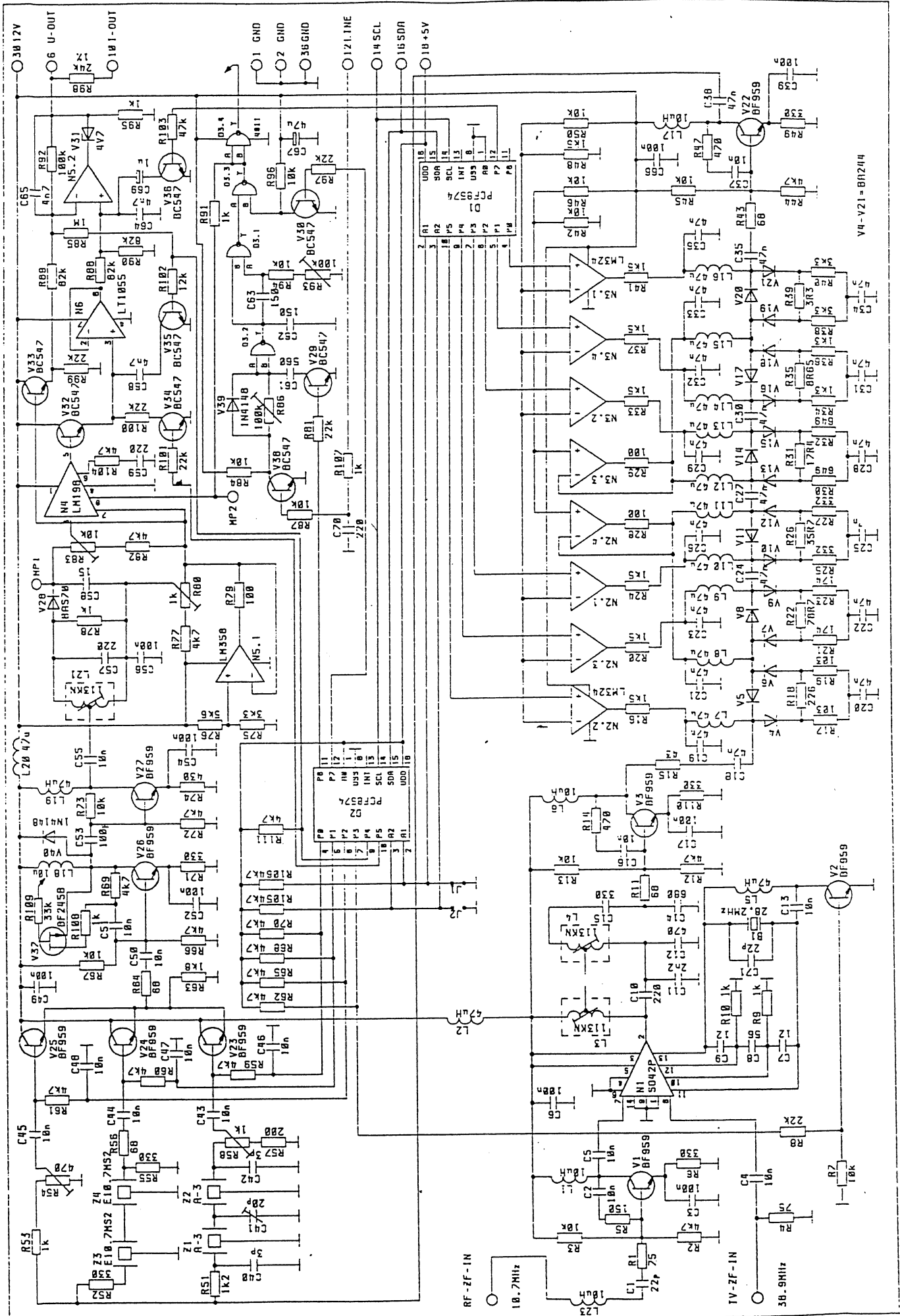
BLATT

1

MC-Service



RZF85B-L				BESTUECKUNGSPLAN		BEZ. RADIO-ZF-PLATINE		KATEK GIBH BAHNHOFSTR. 108 D-6217 GRASSAU	
1989	DATUM	NAME							
BEARB.	03.07.	HE							
GEHIL.	1588/01	05							
INDEX									
								IMSTH0 BLATT	
								1.52 6	



V4-V21=BA214

1989	TAG	NAME
BEARB.	17.03.	LA
GEPR.		KL
GEAND.	LA	1776/92 BRE

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 POSTFACH 260 D-8200 ROSENHEIM 2
 TEL. 08931/184-8

MEASUREMENT AMP.

MC-Service

MA3A-D
 BLATT
 1

SOFTWARE VERSION MFK55

V3.9 Reference voltage MC-Module 4,56V

V3.9 B Reference voltage MC-Module 2,56V

Software also in TELEKOM version available PTT

V3.82 N Nicam,english

V3.92 ENGLAND

V3.92 B

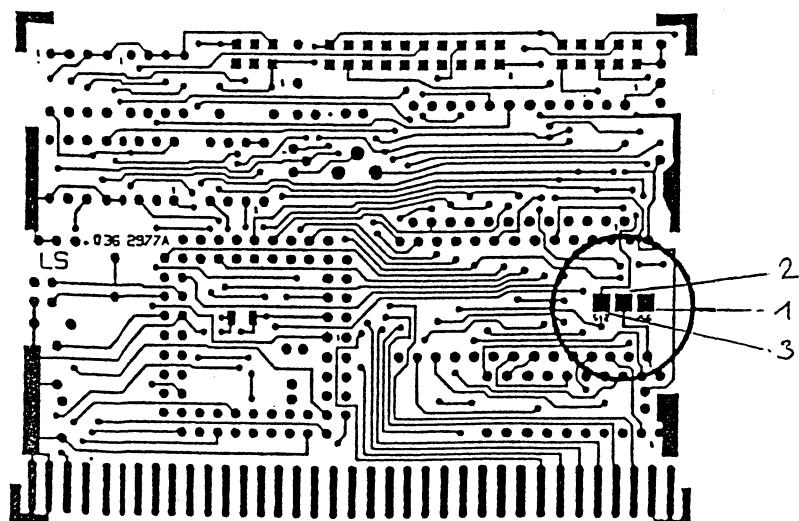
V3.93 FRANCE

V3.93 B

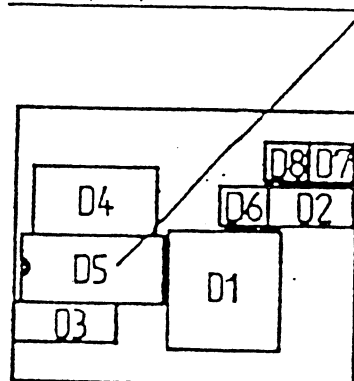
Instruction of changing EPROM

EPROM 27C256: Useing this chip make a solder strap from eyelet 1 to eyelet 2.

EPROM 27C512: Useing this chip make a solder strap from eyelet 2 to eyelet 3.



EPROM (D5)

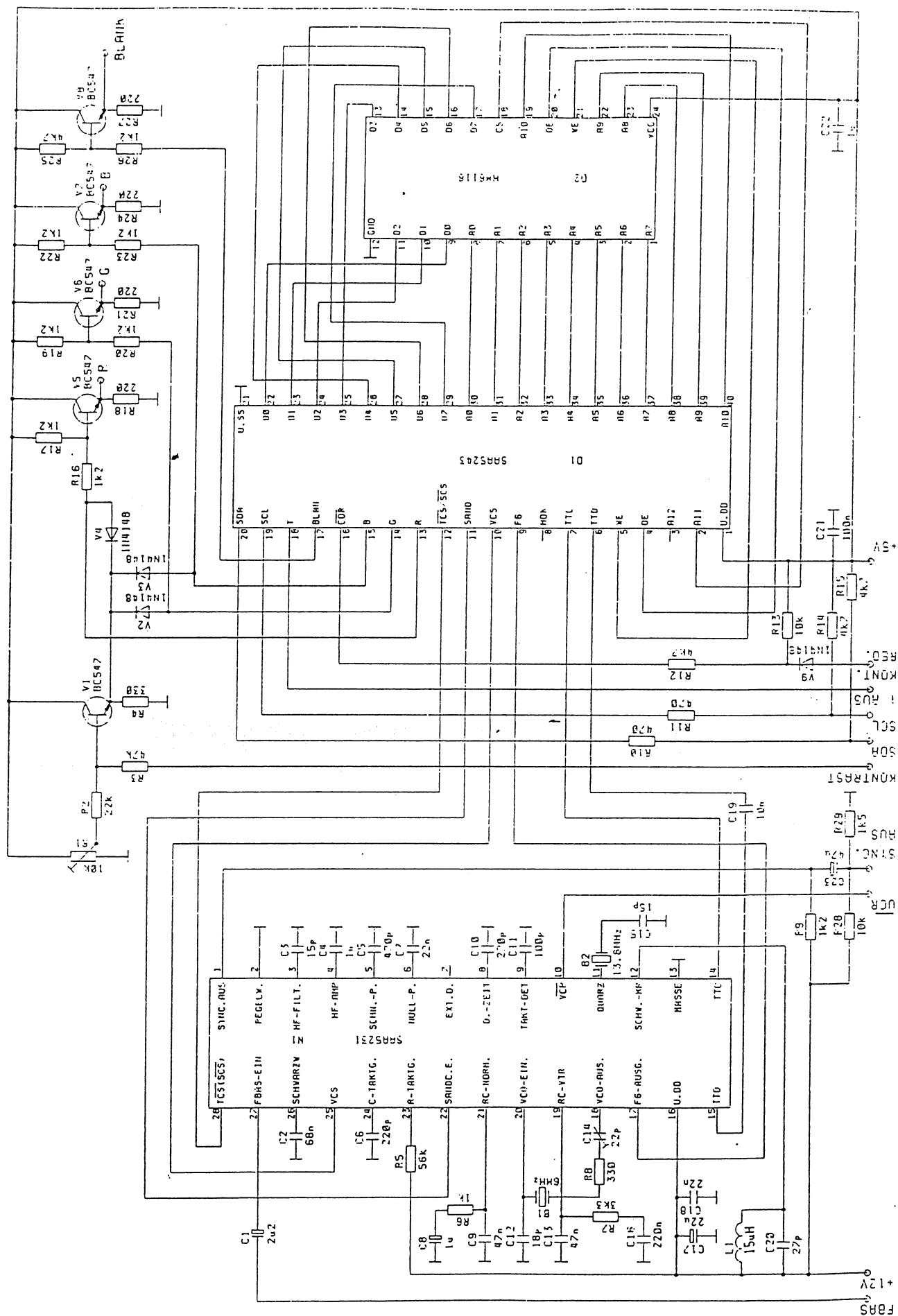


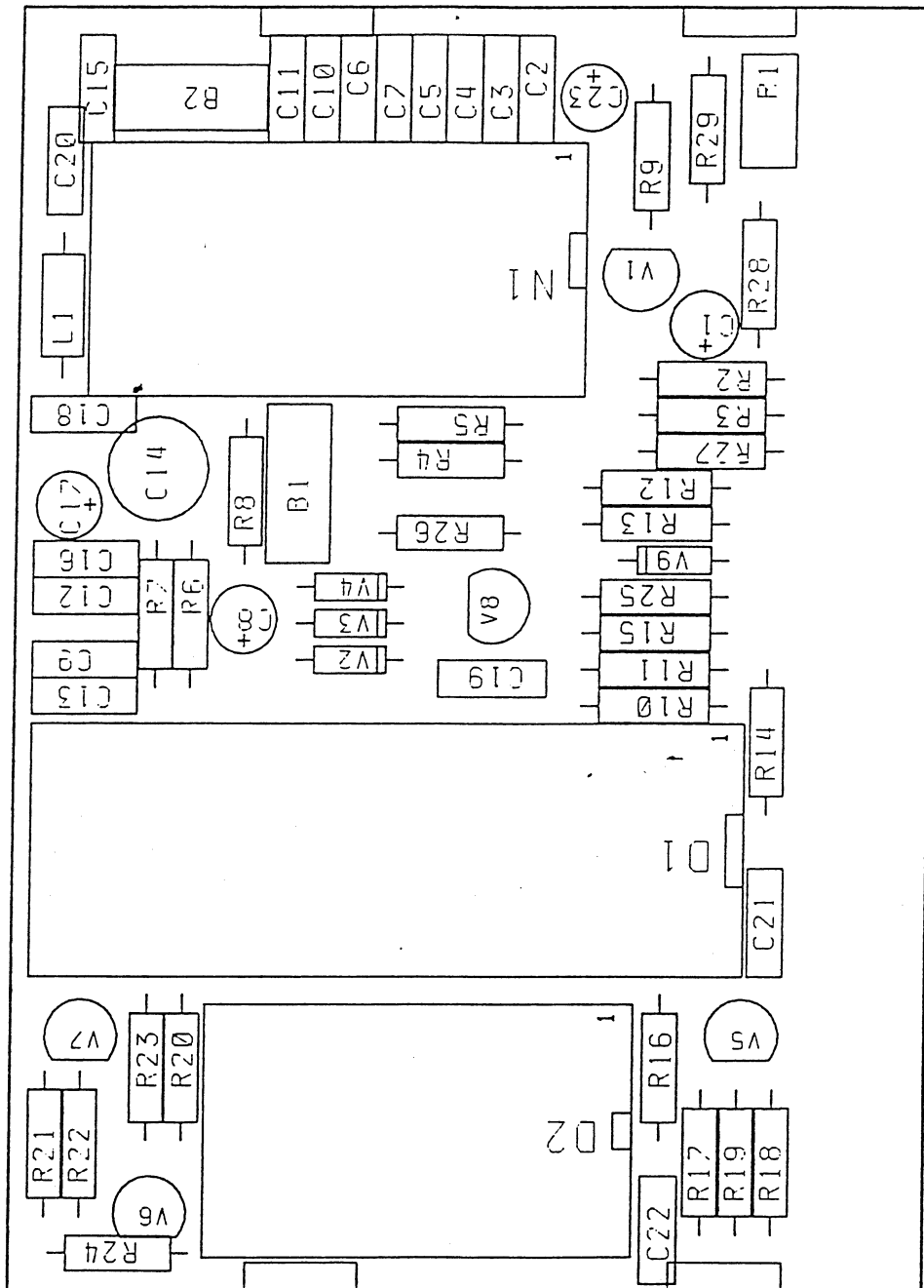
1999	TAG	NAME
BEFRE.	23.11.	A.L.
RENDER.		

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COMMUNICATIONS-ANLAGEN
POSTFACH 268 D-8200 ROSENHEIM 2

VIDEOTEXT-DECODER
MC-Service

VT852-D
BLATT





MC-Service

VT85A-L

VIDEOTEXT-DECODER

BESTUECKUNGSPLAN BAUTEILSEITE

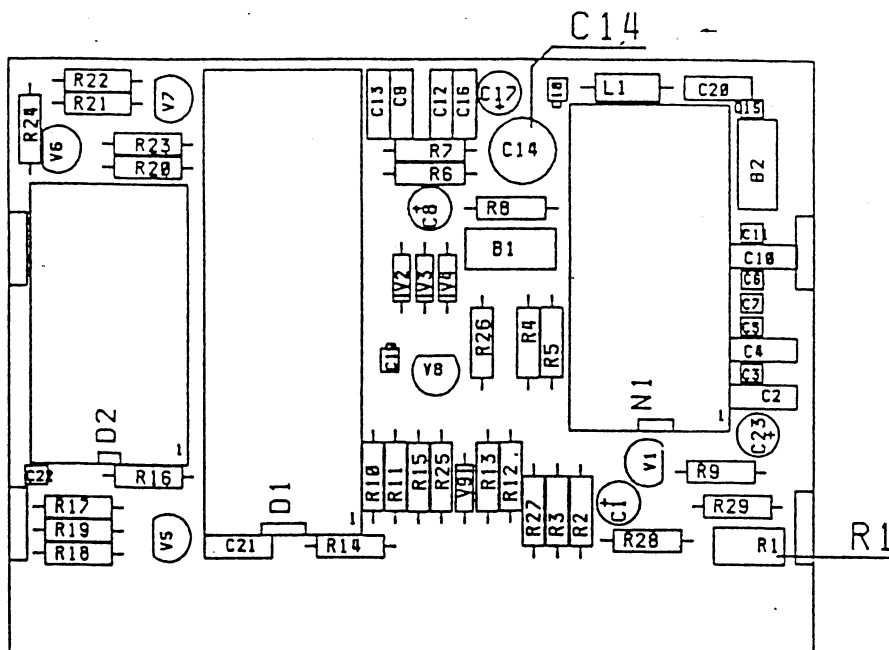
1989	DATUM	NAME
BERR.	12.06.	A.L.
GEPR.		
TIME	1366/89	A

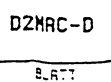
NOTES	DATE
0-6217	12/05/89
0053100	0001
2:1	0

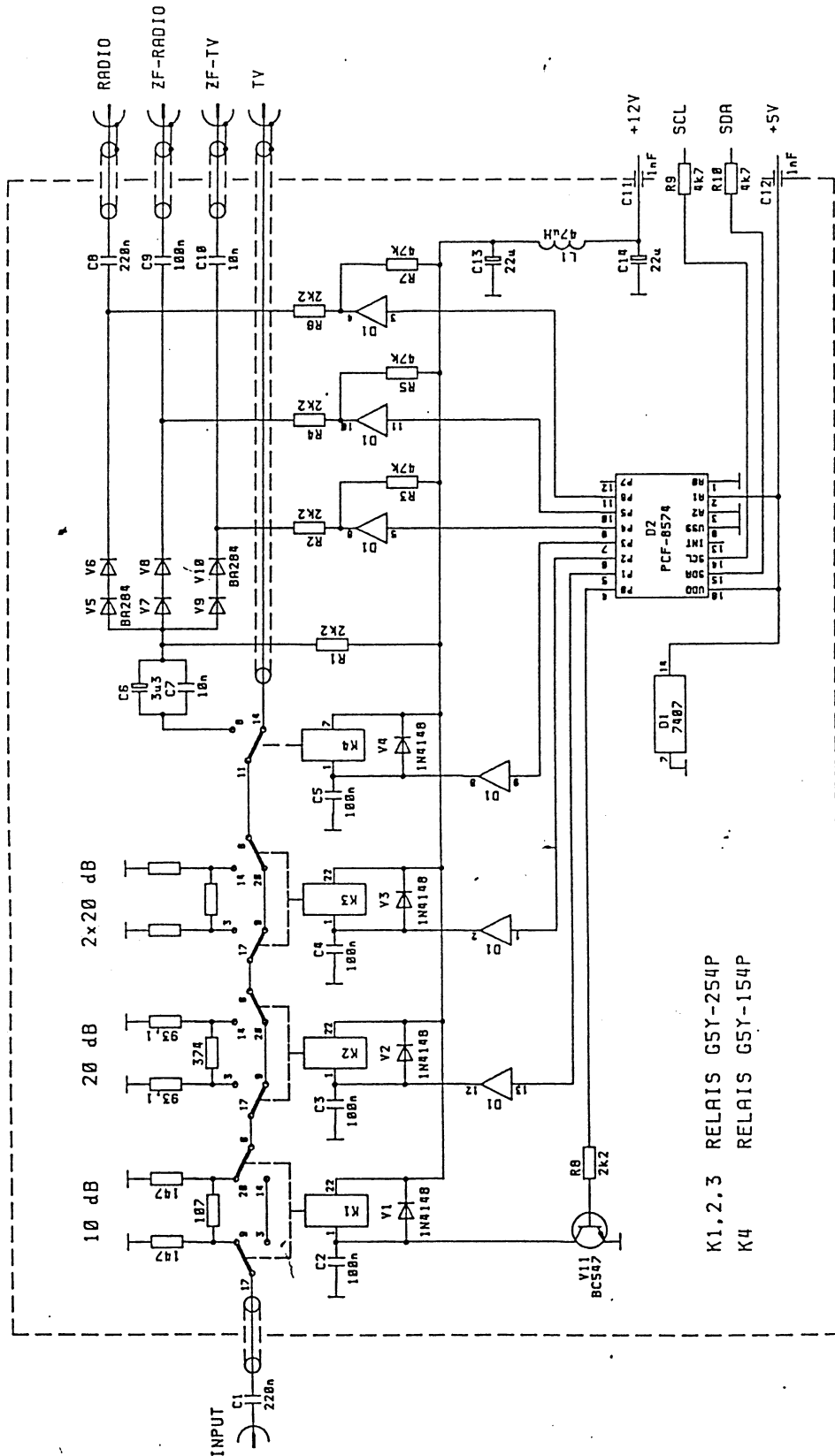
INSTRUCTIONS FOR ALIGNMENT OF VIDEOTEXT BOARD

Matching Adjustment: 1. Display videotext picture.
2. Connect test probe of oscilloscope to contact 32 of the videotext module.
3. Set CCVS-signal to minimum, with adjustment control R1.

Mix operation: 1. Press the key "MIX".
2. Decrease input signal with an external attenuator, so that picture is not synchronized.
3. Adjust trimmer C14 for stationary picture.







MC-Service

21 FEB 1989

1989	TAG	NAME
BEARB.	21.02.	LA
GEPR.		
GERND.		
INDEX		

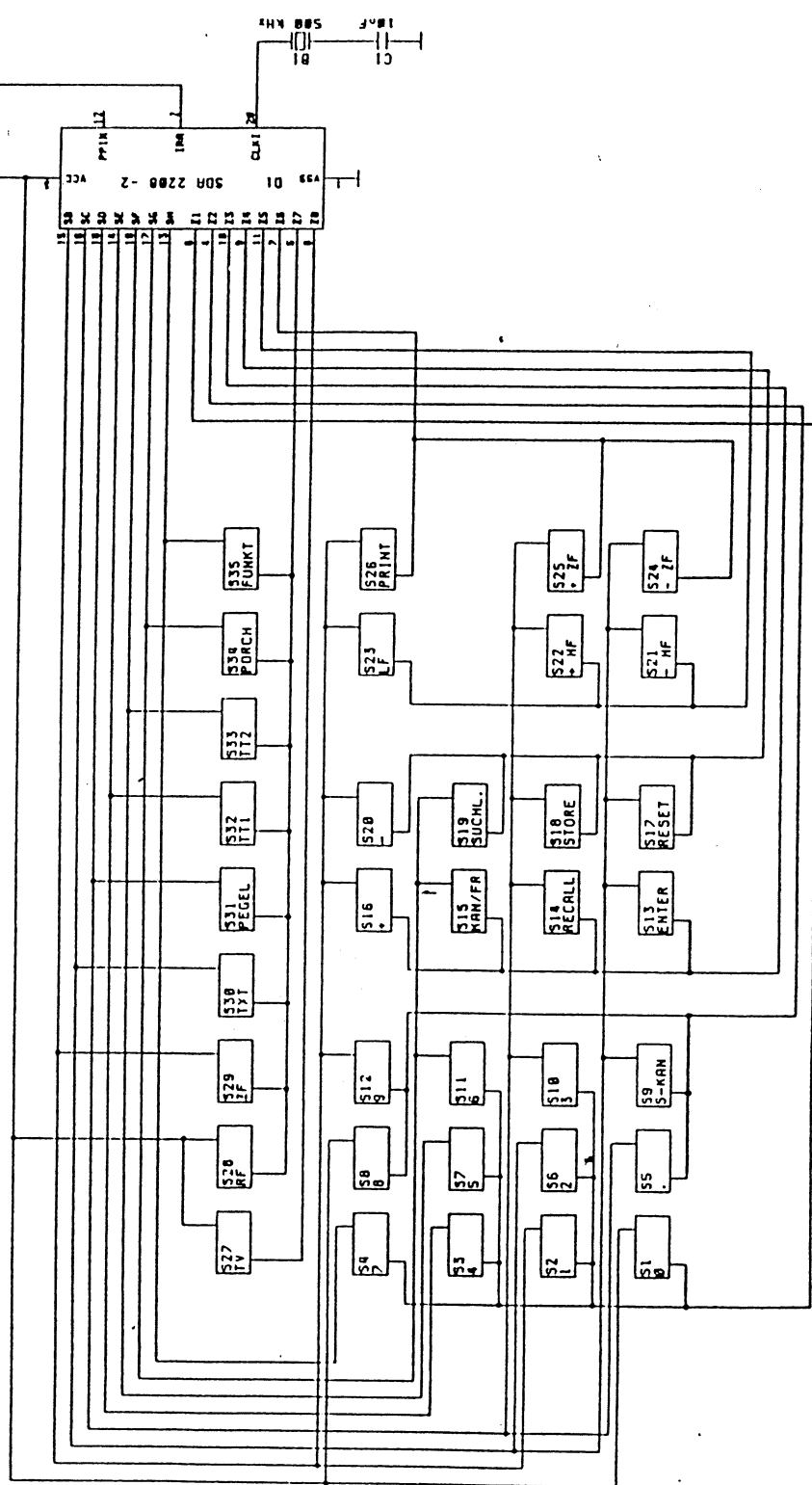
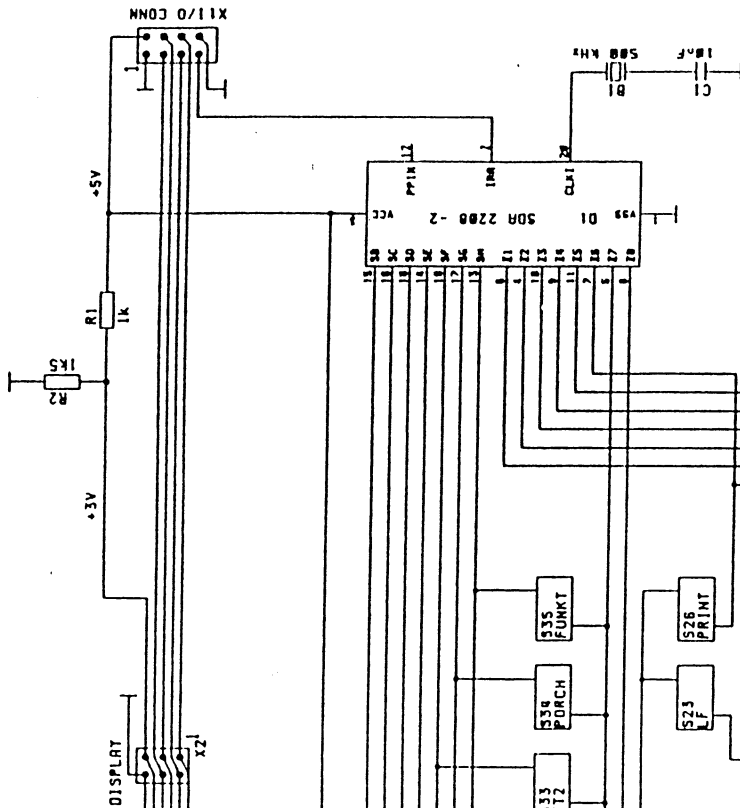
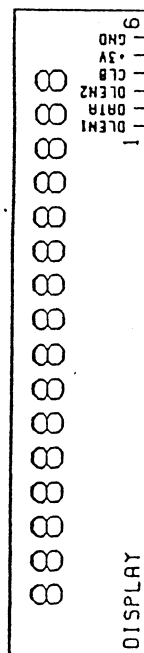
KOTTHREIN
 ANTENNEN · ELECTRONIC
 COMMUNICATIONS-ANLAGEN
 POSTFACH 260 D-6260 ROSENHEIM 2
 TEL. 08031/ 184-8

RF-ATTENUATOR

HFT-D

BLATT

1



MC-Service

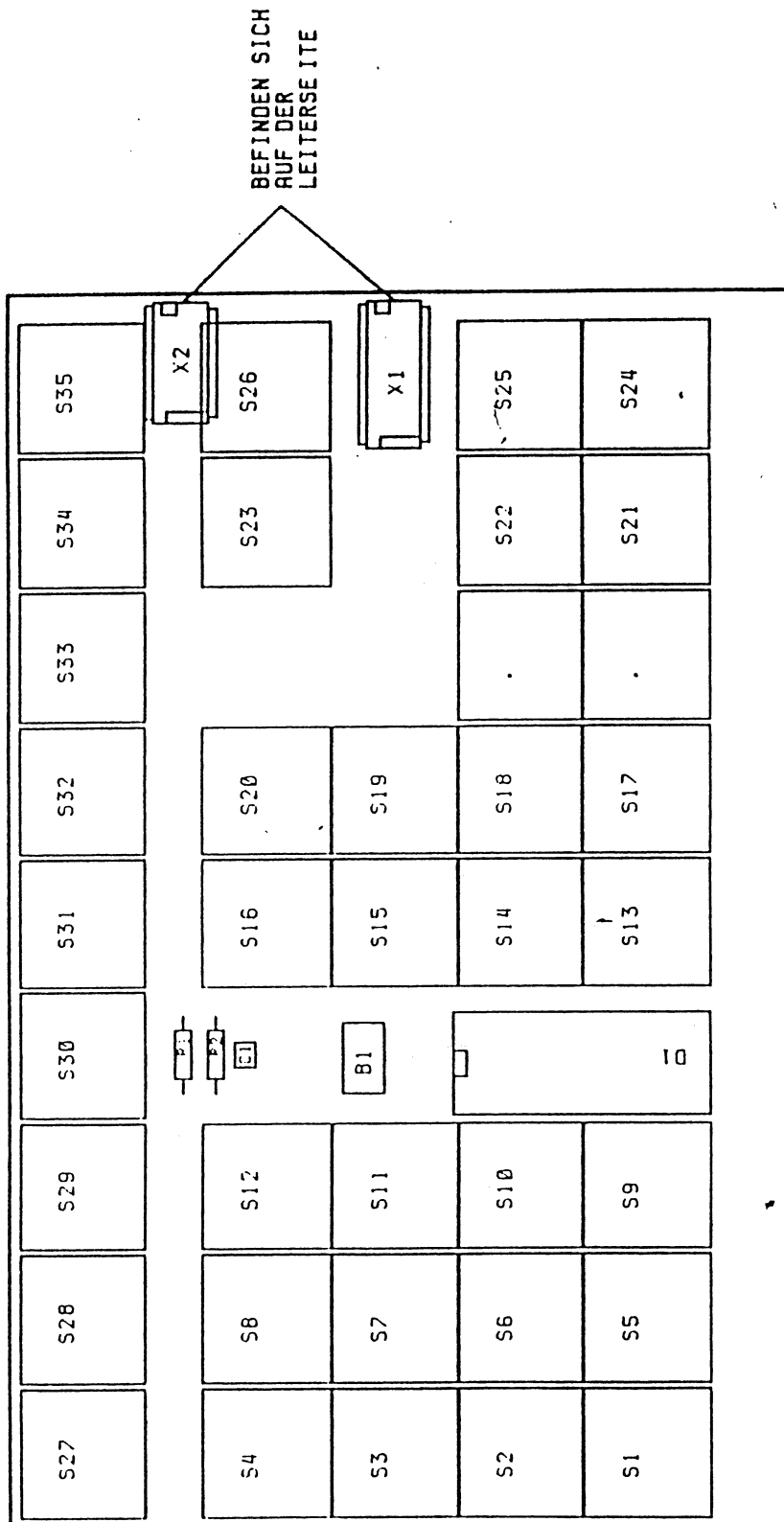
1989	TAG	NAME
BEARB.	06.11.	A.L.
REND.	1409/89	A.L.

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BEZ.: KEY-BOARD

KEY85A-D

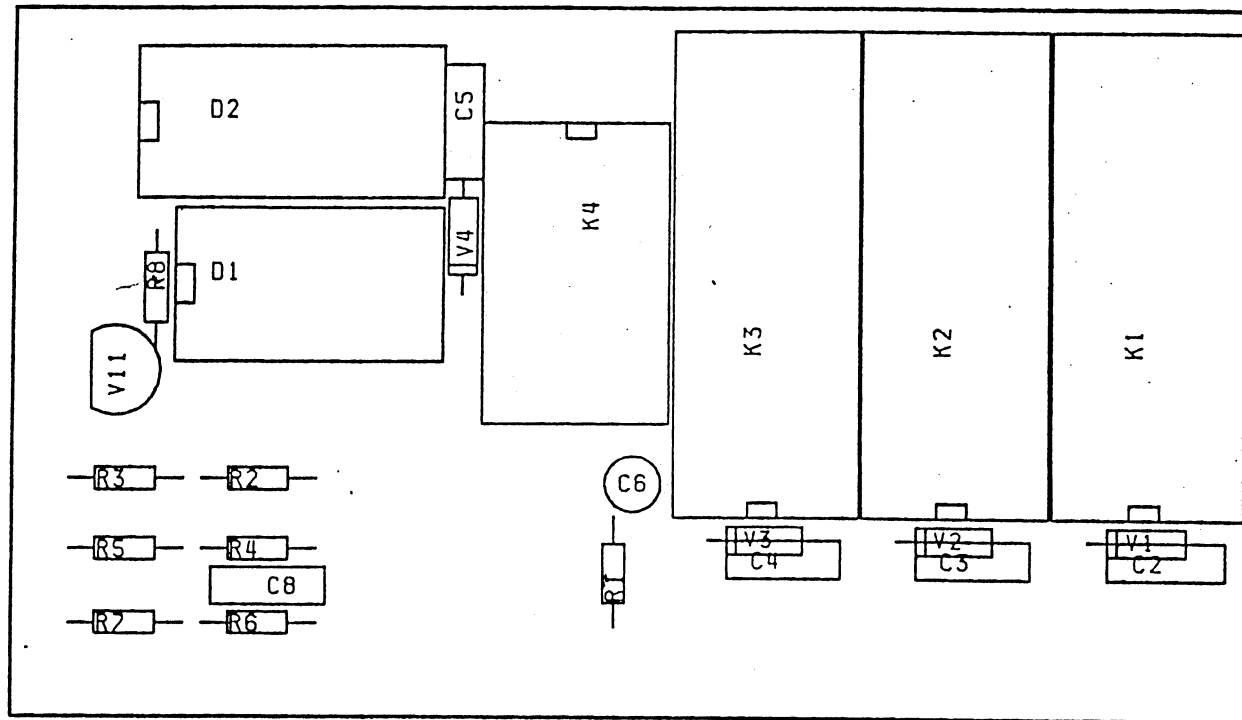
BLATT
1



KEY85A

			BESTUECKUNGSPLAN BAUTEILSEITE		KEY-BOARD		KATEK GMBH BAHNHOFSTR. 108 D-8217 GRASSRU	
1989	DATUM	NAME			BEZ.			
SERIAL	05.11.	A.L.			MAT-NP.			
					BG-NR.			
							MASSTAB	
							BLATT	
							1,52	
							6	

MC-Service

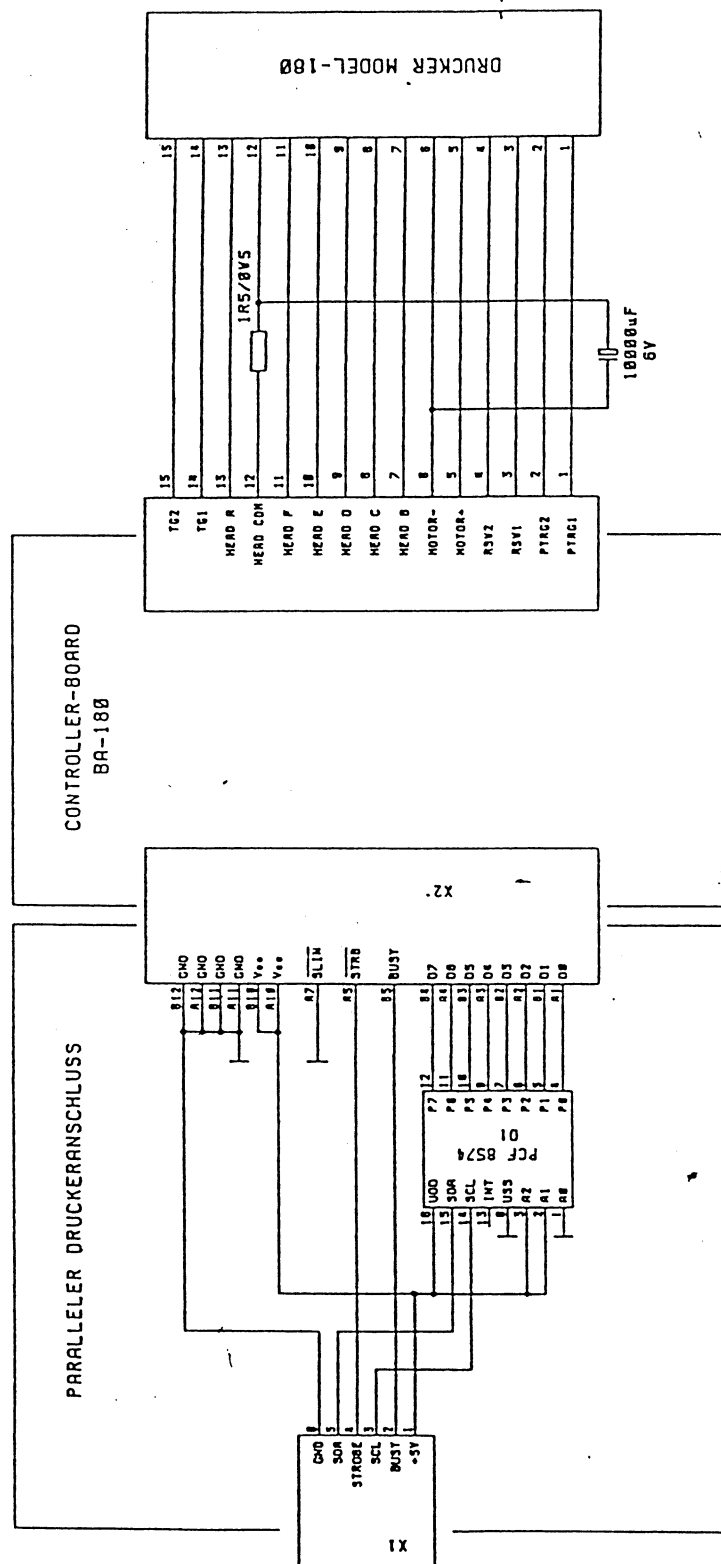


1989	DATUM	NAM
BEARB.	09.03.	LA
GEPR.		

BESTUECKUNGSPLAN (BAUTEILS..

RF-ATTENUATOR

KATEK Gm
 BRAHNHOFSTR. 11
 D-8217 GRASS
 MASSSTAB BLAT
 2:1 64



MC-Service

1989	TAG	NAME
BEARB.	07.03.	LA
GEPR.		
GERND.		
IMOEX		

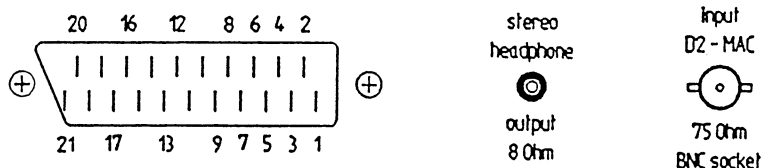
KATHREIN
 ANTennen • ELECTRONIC
 COMMUNICATIONS-ANLAGEN
 POSTFACH 288 D-6200 ROSENHEIM 2
 TEL. 06031/184-0

PARAL. PRINTER

DAP-D

BLATT
1

External connection possibilities



Euro norm socket

- 2 audio input R
 - 4 audio earth
 - 6 audio input L
 - 5 blue earth
 - 7 blue input 0,7 V RL = 75 Ohm
 - 9 green earth
 - 11 green input 0,7 V RL = 75 Ohm
 - 13 red earth 0,7 V RL = 75 Ohm
 - 15 red input 0,7 V RL = 75 Ohm
 - 16 blank input 0,7 V RL = 75 Ohm
 - 8 Switching voltage video input (12 V) - output (0V)
or function F7 activates the Comp. Col. Signal input
 - 17 video earth
 - 19 video output FBAS ca 1 Vpp to 75 Ohm
 - 20 video input FBAS 1 Vpp RL = 75 Ohm
 - 21 earth = connector screening
- For external RGB operation with the Euro norm socket 1V must be applied to the pin 16 and the function F7 entered.
The synchro signal must be connected to Pin 20 of the Euro norm socket

Stereo head phone output (3,5 mm jack socket)

- On radio operation mono/stereo
- On TV operation SC1 tone 1 left
- On TV operation SC2 tone 2 right

MC-Service

M O D U L E - O R D E R - N U M B E R S

MFK 55

J - Nr.	Type	Menü	Module											
			Ton - ZF	ZF-Video	Drucker	Grafik	VT	RS 232	D2 - MAC	AZV	Prozessor	Tuner	Pal - Secam	Radio
8217 / B	mit Option (VT ; Drucker ; Grafik)	D	167655	16700011	16700030	16700036	167589			167586	16700001	167651		167038
8219 / D	OIRT mit Option (VT ; Drucker ; Grafik)	E	16700014	16700042	"	"	"	16700003						
8221 / H	System I mit Option (VT ; Drucker ; Grafik) 6 MHz	E	167635	16700011	"	"	"							
8222 / F	Frankreich ohne Option	F	167655	16700017				"						
8228 / G	Frankreich mit Option (VT ; Drucker ; Grafik ; D2 - MAC ; RS 232)	F		"	"	"	"	"	16700002					
8231	mit Option (VT ; Drucker ; Grafik ; D2 - MAC)	E		16700011	"	"	"		"					
8234	Norwegen mit Option (RS 232 ; Nicam ; 50 Ω BNC)	E		16700041				"						
8237	mit Option (VT ; Drucker ; Grafik)	E		16700011	"	"	"							
8242 / I	mit Option (VT ; Drucker ; Grafik ; D2 - MAC ; RS232)	D		"	"	"	"	"	"					
3100	mit Option (VT ; 50 Ω BNC ; Video - Ausgang BNC) Post	D		"			"							

MC-Service

LIST OF SPARE PARTS MFK 55

Module	167 651	Tuner
Pos.-Nr. V7,V8,V11...V20	905 270	BA 244
V9	905 295	BF 959
N1	905 436	IC SDA 3202
V3...V6	905 586	Trans BC 328-40
B1	907 2995	Quartz 3,2 MHz

Module	168 1012	RF-Attenuator
Pos.-Nr. K1...K3	991 417	Relais G5Y-254P 12V DC
K4	991 418	Relais G5Y-154P 12V DC
V5...V10	905 664	BA 284
D1	905 1047	IC-SN 7407
D2	905 1054	IC-PCF 8574P

Module	136 3247	Line + Field Timebase Board
Pos.-Nr. L4	099 688	Linearity Potentiometer
L6	099 687	EHT-Transformator
V12,V14,V18	905 533	Diode BYV 96D
V17	905 9911	Trans P477
N3	905 9912	IC TDA 1940
V13	905 503	Diode Z-ZY 200
D1	905 313	IC-HEF 4011B

Module	167 000 03	D2 MAC Decoder
Pos.-Nr. D5	905 1060	IC 51C64-12
D6	905 1061	IC AMU 2485
D3	905 1062	IC VCU 2133
D7	905 1063	IC MCU 2632
D4	905 1064	IC DMA 2280
B1	907 2997	Quartz 20.25 MHz
B2	907 2998	Quartz 18.432 MHz

Module	136 2951	Tube Base
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Module	136 2974	Key Board
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Module	167 00001	Microcomputer
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Pos.-Nr.	D1	905 1045	IC-SAB 80C535-N
	D7,D8	905 1046	IC SDA 2526
	D2	905 1048	IC 74HCT138
-	D5	905 1049	IC 27C256/250
	D3	905 1050	IC 74HCT373
-	D4	905 1051	IC NEC D446C
	N1	905 1052	IC LM 336Z/2,5V
	D6	905 1441	IC TL 7705
	B1	907 2976	Quartz 12MHz

Module	136 3249	Signal Board
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Pos.-Nr.	D1	905 1053	IC 74 LS 26
	N1	905 1054	IC PCF 8574 P
	N3	905 1055	IC HEF 4052BP
	N2	905 9914	IC TEA 2014A

Module	167 038	Radio-IF-Board
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Pos.-Nr.	Z2	991 052	TOKO-Filter TKXCS-33733 BS
	Z1	099 957	Filter 85AC-3000 10.7 MHz
	Z3	099 958	Filter 85ANS-1715BM 10.7MH
	B2	198 994	Keramik-Filter 455 KHz
	N1	905 1038	IC TDA 4210-3
	D1	905 1039	IC SDA 2121
	N3	905 222	IC S042P UKW-Mischer
	V5,V6	905 270	BA 244
	V3	905 295	BF 959
	N5	905 400	IC LM 78L05AC2
	N2	905 412	IC TCA 4510
	N4	905 414	IC TDA 2048
	V8	905 587	BC 517
	V2	905 590	BF 939
	V11	905 591	T1-N 5221 B C2V4 05W
	V21,V22	905 760	BZX 79/C10
	B3	907 901	Quartz 4,0MHz
	B1	907 2978	Quartz 10,245MHz

Module		167 000 13	IF-Video/BG-L-RSB
		167 000 41	IF-Video Norway
		167 000 42	IF-Video OIRT
		167 000 17	IF-Video France
Pos.-Nr.	L8,L9	991 327	Filter 5,5 MHz P119ANS-434
	L4,L10	991 901	Filter 113KNS-K1762 HM
	L5,L6	991 902	Filter 113 KNAS-2K813 AKI
	Z1	991 903	OFW Filter L 9350
	Z2	991 904	OFW Filter G3251 38.9MHz
	Z3	991 905	OFW Filter F4955 12MHz
	V8,V20	905 9901	BAL 74
	V5,V6,V22	905 9902	BAV 99
	V13,V14,V2,V1,V21	905 9903	BC 847B
	V3,V4,V19,V11,V12,V18	905 9904	BC 857B
	V7,V15..V17,V10,V9	905 9905	BF 799
	N2	905 1025	IC TDA 5930
		905 9906	IC TDA 4445A

Module		167 636	RS232-Interface
Pos.-Nr.	X4	991 473	D-Sub 25pol Socket
	D1	905 9910	IC MAX 232

Module		167 000 36	Grafic-Controller CRT
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Module		168 331	Power-Supply-Board
Pos.-Nr.	V1	093 702	Rectifier
	K1	991 084	Relais DC 9V
	S1	991 134	Switch
	L4	991 475	Coil
	T1	193 396	Transformator
	V4	905 136	BZ102 1V4
	V9	905 166	BZX 79 C6V8
	N1	905 393	IC L200 CH
	N2	905 478	IC-LT 1070CT
	V5	905 504	SI-BYV 95B
	V11,V12	905 585	BYS 26
	V6	900 7165	1000n 100V MKT

Housing Parts		168 000 82	Carrying Handle
		072 821	Printer-Ribbon
		072 822	Printer-Paper
		110 000 01	Standing Feet Right
		110 000 02	Standing Feet Left

Module	167 599	Sound-IF-Board	
	167 635	Sound-IF-Board England	
	167 637	Sound-IF Board OIRT	
	167 000 40	Sound-IF-Board Norway	
Pos.-Nr.	Z1	991 020	IF-EingangsfILTER SFE5,74
	Z3	991 021	IF-Discrim. CDA 5.74MC10
	N3...N5	905 1074	IC TCA 830SM
	V12,V13	905 270	BA 244
	N1,N2	905 336	IC TBA 120 T

Module	136 3183	Scart-Socket	

Module	991 463	Euro-AV-Socket	

Module	167 000 29	Control Board BA 180	

Module	991 040	Bulb 12V/25mA	

Module	167 586	Measurement-Amplifier	
Pos.-Nr.	Z1,Z2	991 437	Quartzfilter 10M7B
	Z3,Z4	991 438	Ceramicfilter SFE 10,7MS
	D1,D2	905 1054	IC-PCF 8574P
	V31	905 162	Z-BZX 79 C4V7
	N1	905 222	IC S042P UKW-Mixer
	V4...V21	905 270	BA 244
	V1..V3,V22..V27	905 295	BF 959
	D3	905 313	IC HEF 4011B
	N2,N3	905 320	IC LM 324
	V28	905 575	Diode BAS 70-02
Module	167 000 13	IF-Video/BG-L-RSB	
	167 000 41	IF-Video Norway	